FOR THE HOMEBREWER & BEER LOVER

# ■ The Journal of the American Homebrewers Association ■

BREWING



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In this issue:

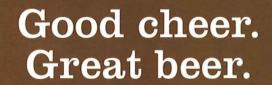
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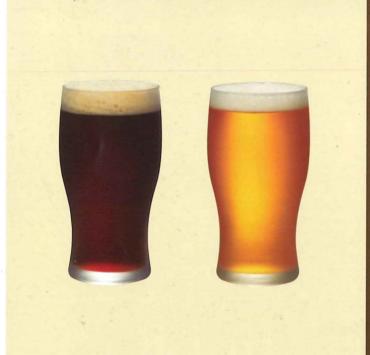
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**E**ating fresh, local and organic are the hottest food trends today, and the same might be said for beer.

The previous editor of this magazine, Ray Daniels, in his role as the former Brewers Association craft beer marketing director, came up with the statistic that the average American lives within 10 miles of a brewery, so supporting your local brewery is now easier than ever. (Plus, you can't get more local than brewing your own beer!)

As I mentioned in the last Editor's Desk, many craft breweries are taking the "fresh and local" concept very seriously, with many growing their own barley and hops. Rogue Ales recently announced it had planted 122 acres of winter barley, and will also plant an additional 103 acres of spring malting barley. Rogue, which also grows its own hops, entered into a strategic alliance with Dr. Bill McAllister, a Portland surgeon who never outgrew his South Dakota farming roots and also grows apples, pears, cherries, blueberries, plums, rye, hay and wine grapes.

In researching Wolaver's for the Commercial Calibration department in this issue, I came across Will Stevens Pumpkin Ale. This is a certified organic ale named after the farmer who grew the pumpkins for Wolaver's at his Golden Russet Farm in Vermont. (For the judges' review of another Wolaver's beer, Oatmeal Stout, go to page 45).

The other Calibration beer is Oxford Organic Amber Ale, which, if you take a closer look, is actually brewed by a new branch of Clipper City Brewing Co. in Baltimore.

As Clipper City's Hugh Sisson explains in the Calibration section, the brewery is branching out with an organic line in part to support organic farmers. "Sustainablilty is something that we feel strongly needs to become more a part of the everyday business scene, and this is one way we can put our money where our mouth is," said Sisson. "And in recent years we have all certainly come to have a much greater appreciation for how dependent the brewing industry is on the agricultural industry. This is just one more way we like to support our 'brothers in arms."

Another craft brewery, Blue Corn Brewery in Santa Fe, N.M., is offering what it believes to be the first commercial beer to feature certified organic, native New Mexican hops in its Aztlan Winter Ale.

Blue Corn head brewer Brad Kraus said, "In all my years of research about brewing in New Mexico, I have not found a single reference to the use of Humulus lupulus var. neomexicana, or New Mexican native hops, in the brewing of beer here. Since these were grown organically, I felt it fitting to use only organic ingredients."

Speaking of organic farming, if you follow Ali Hamm's instructions on page 33 and do some research into varieties, you can plant and cultivate your own hops. Hamm is a Colorado State University graduate student working with an experimental organic hop-growing program funded in part by New Belgium Brewing Co. and Odell Brewing Co. Hamm tends to two plots with 150 plants and has been able to provide fresh hop cones for Odell, which used them in its fresh hop Hand Picked Pale Ale.

We hope you'll use this special "Sustainability" issue of *Zymurgy* for ideas for brewing some "green" beer of your own this St. Patrick's Day.

Jill Redding is editor-in-chief of Zymurgy.



# Journal of the American Homebrewers Association®

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# Brewers Association<sup>sм</sup>

The purpose of the **Brewers Association** is to promote and protect small and independent American brewers, their craft beers, and the community of brewing enthusiasts. The Brewers Association is a not-for-profit trade Association under Section 501(c)(6) of the Internal Revenue Code.

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Published by the American Homebrewers Association, a division of the Brewers Association, a not-for-profit organization located at 736 Pearl Street, Boulder, CO 80302-5006 USA. Membership is open to everyone. *Zymurgy* (ISSN 0196-5921, USPS 018-212) is the bi-monthly journal of the American Homebrewers Association and is published six times per year. Periodicals Postage Paid at Boulder, CO and additional mailing offices. Canada Post Agreement Number 41197537. Annual memberships are \$38 U.S., and \$44 International and include a \$35 subscription to *Zymurgy*.

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POSTMASTER: Send address changes to: *Zymurgy*, 736 Pearl Street; Boulder, CO 80302-5006. Printed in the USA.



# zymu

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- **WORLD OF WORTS** By Charlie Papazian
- 64 LAST DROP By Ralph Bucca

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- **DEAR PROFESSOR**
- **CLUB ONLY**
- **HOMEBREW MARKET**
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By Chris O'Brien

All beer was organic until European and North American brewers began using barley and hops grown with petrochemicals around the middle of the 20th century.

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Homebrewing takes a lot of energy and water. As climate changes and water shortages become more and more prominent, low-energy homebrewing becomes more appealing.

# 32 | Give Your Homebrew Terroir

Recent hop shortages are debasing your homebrews and putting a dent in your wallet, so why not grow your own? Hops are easy to grow, and their requirements are simple.

# 40 Irish Red Ale

By Mark Pasquinelli

The "other" beer from the Emerald Isle, Irish Red, is quick and simple to make, so there's no excuse not to brew a batch of this delightfully drinkable ale.









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# >> GET THERE!

# Classic City Brew Fest

More than 175 of the world's greatest beers will be available for sampling at the Classic City Brew Fest in Athens, Ga. on April 5. The Brew Fest takes place at the Foundry Park Inn & Spa in downtown Athens. Only 750 tickets will be sold, and they are expected to go fast.

The intimate Brew Fest continues to rank among the best beer events in the region, with live music, food and also non-alcoholic drinks available. Part of the festival proceeds benefit the Project Safe Women's Shelter and the Athens Area Humane Society.

The festival starts at 2:30 p.m. and goes until 6 p.m. Tickets are \$36 and are available at the event's Web site, www.brewfest.net. For more information call (706) 254-BREW.

# March 21-22

Atlantic City Beer Festival Atlantic City, NJ (609) 412-9056 www.acbeerfest.com

# March 28

Myrtle Beach Beer Fest Myrtle Beach, SC (843) 712-2618, andrea@festivalpromotionsmyrtlebeach.com www.festivalpromotionsmyrtlebeach.com

# April 10-11

15th Annual Spring Beer & Wine Fest Portland, OR stevwoolard@aol.com www.springbeerfest.com

# April 25

San Francisco International Beer Festival San Francisco, CA sfbeerfestival@yahoo.com www.sfbeerfest.com

# April 25-26

TAP New York Hunter, NY. (518) 263-4223 questions@huntermtn.com www.tap-ny.com/index.html

# May 30

SAVOR: An American Craft Beer & Food Experience Washington, D.C.
www.savorcraftbeer.com

# BREW POLL: Best Beers in America

It's time once again for  $\ensuremath{\textit{Zymurgy}}\xspace's$  Best Commercial Beers in America Survey.

As homebrewers and beer lovers, Zymurgy readers have the most educated and adventurous palates on the planet. So for the seventh year, we are asking you, "Who brews the best beers in the land?"

The rules are simple: just write down a list of the 20 best commercial beers available in the U.S. market and send your list to jill@brewersassociation.org by March 20. Please also include your first and last

name and where you live. You can vote for both domestic and imported beers, but they have to be available in the United States. We will tabulate the results and present them, along with clone recipes for some of the top beers, in the July/August issue of *Zymurgy*.

While you're voting, take a minute to review one of your top beers, in 150 words or fewer, and send that along as well (this is appreciated but not mandatory.) We'll include some of your comments in the July/August issue as well as in the "You've Gotta Drink This" in future installments of Beeroscope.

Thanks for voting!



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# GREAT GADGET WHAT'S NEW FROM Bass Brolly Bass Brolly It is a nifty little tool that helps beer provides and

drinkers create the perfect Black and Tan at parties and get-togethers.

The Black and Tan was first concocted in a British pub in 1889. The precise combination of Bass Pale Ale and stout resulted in a rich, creamy flavor unlike any other before it.

For years, beer lovers have attempted to pour their Bass Black and Tan by placing a spoon over the lid of their pint glass. That often results in a concoction that's closer to a caramel than a Black and Tan. The Bass Brolly—so popular when it was introduced in January 2008 that demand far outpaced supply—sits atop the pint glass and allows the beer to flow through slowly, resulting in the desired layered effect between the Bass and the stout beer of your choice.

> The Brolly is available for purchase on www.budshop.com. Additional information on the Bass Brolly, including step-by-step video instructions on how to create the perfect Black and Tan, is available at www.bass.com.



# YOU'VE GOTTA DRINK TH<mark>IS</mark>



# Southampton Saison Deluxe

Southampton Saison Deluxe is simply the best saison-style beer available in the United States. It is light and refreshing, but complex and satisfying. Beautiful straw color with a huge, frothy white head. Amazing nose of tropical fruit, black pepper and earthy yeast, and a light graininess. Flavor is perfectly balanced between light malt sweetness and hop bitterness. Medium-light in body, with high carbonation and a dry finish. This is a great example of a beer that fits style guidelines for a saison perfectly and is still an interesting and fun beer to drink.

Ben Sibley Blowing Rock, N.C.

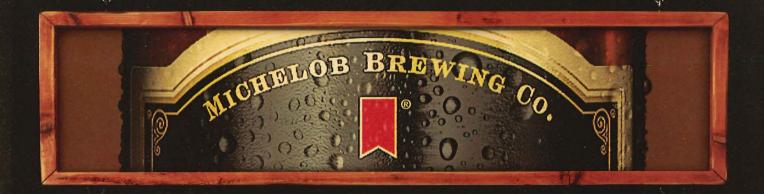
If you've had a beer you just have to tell the world about, send your description, in 150 words or fewer, to jill@brewersassociation.org.

# THE LIST

Flavor & The Menu magazine recently released its annual selection of Top 10 Flavor Trends for 2009, with craft beer playing a central role for culinary trends. To learn more about each trend, visit www.flavor-online.com.

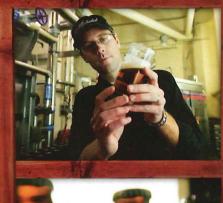
- 1. Top Culinary Trend: Tapping Beer's Potential. Now that beer is the new wine, thanks to a flood of new craft beer products and imports, chefs are creating menus that match beer lists in their complexity and casual-yet-sophisticated approach to pub food. Beyond the usual pretzels and peanuts, these post-modern pub menus present hearty food that's designed to pair with beer.
- Top Concept Trend: Barbecue Branches Out
- 3. Top Comeback Trend: French Bistro
- Top Menu-Making Trend: Snack Attack
- 5. Top Ethno-Cuisine Trend: Asian Noodle-Mania
- 6. Top Sauce Trend: Fruitful Finishes
- 7. Top High-Impact Ingredient: American Artisanal Cheese
- 8. Top Buzzword: Farmers Market
- 9. Top Beverage Trend: Latin Refreshers
- 10. Top Dessert Trend: Italian Inspirations





# **OUR BREWMASTERS' PLAYGROUND.**

The quest for the finest beer led the original michelob brewmasters around the world to develop their recipe. In that same spirit, the michelob Brewing Company is a place to concoct, experiment and quite literally, shake things up. It's a playground for the best and brightest brewers to craft our next great beer.







# A Memorable GABF

# A Memorable GABF

Dear Zymurgy,

Last May, my friend Alex Drobshoff won Best in Show in the West Coast regionals of the Sam Adams LongShot Competition with his Traditional Bock. Alex is a knowledgeable brewer in our homebrew club, the Mad Zymurgists; a fellow beer judge with a friendly, unassuming disposition. In October, Alex and three other finalists were flown to the Great American Beer Festival, where the winner of the LongShot would be announced.

I had wanted to attend GABF for years, and this was an ideal excuse to finally make it. The festival was as much fun as I had hoped, and then some. I experienced an impressive array of beers, all poured into reasonable 1-ounce tasters, and was joined at the festival by various friends, including Alex. I was surprised at how common it was to bump into inspirational figures in the brewing world, such as Charlie Papazian, Randy Mosher and Ray Daniels. I met a number of great brewers,

and got to chat with some of the fine people who keep the American Homebrewers Association humming along, Gary Glass and Janis Gross.

But after the first two sessions of the festival had come and gone, the big question still burning in my mind was: "Did Alex win?" Finally, on the last day—Saturday, October 11—that question was answered, as Boston Beer Co. president Jim Koch made the big announcement that Alex's bock had won first place! It will be brewed as part of the 2009 LongShot variety six-pack. Alex was recruited to pour his beer for festival-goers, and the beer





Alex Drobshoff shares his winning beer with Jim Koch (top photo) and friends at the Sam Adams Longshot booth at GABF.



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was fantastic! He seemed extremely honored and perhaps a little stunned to have such a cool opportunity.

Alongside Alex, Carissa Sweigart, winner of the employee competition, poured her amazing Cranberry Wit. The other beer that will be released in this six-pack is the Imperial IPA from Mike McDole. Mike is another very accomplished homebrewer from a neighboring club in our area, DOZE. He had won the competition in 2007, but due to limited availability of the hops needed, was not able to be included in that year's LongShot six-pack. This will

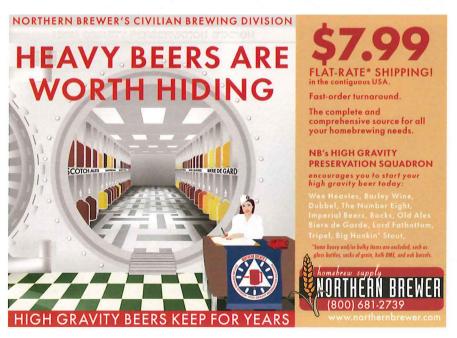
truly be a six-pack worth hunting for when it comes out in April—every honest beer lover should seek it out.

It was a phenomenal experience to be able to attend this festival, and to be there firsthand to support Alex in his win. Thanks go out to all the brewers, volunteers and Brewers Association staff that make this amazing festival a reality, as well as to the Boston Beer Co. for sponsoring such a cool competition. A hearty "Congratulations!" goes out to Alex, Mike and Carissa. In an age when so many remarkable commercial beers exist, there's still nothing quite like a world-class homebrew.

Cheers, Brian Cooper Pleasanton, Calif.

Send your letters to Dear Zymurgy, PO Box 1679, Boulder, CO 80306 or e-mail jill@brewersassociation.org. Hey homebrewers! If you have a homebrew label that you would like to see in our magazine, send it to Allison Seymour, Magazine Art Director, at the above address or e-mail it to allison@brewersassociation.org.







# Using Sugar in the Right Places





Dear Professor,

I was surprised at your answer regarding priming sugars in the November/December *Zymurgy*. You stated that "Corn sugar/dextrose is a bit more readily fermentable than table sugar/sucrose. Sucrose imparts an ever so slight applecider-like taste."

First, all the information I can find states that cane sugar is 100-percent fermentable and corn sugar is slightly less so (around 95 percent). Thus, when priming, less cane sugar is used than if you used corn sugar. Could you provide some reference to your statement that corn sugar is "more readily fermentable"?

Second, I've used table sugar exclusively for priming for many years. This includes all my award-winning beers. I've never detected any cidery flavors. Wasn't this just an old wives' tale or the result of using more table sugar than malt in a recipe as was suggested in kits from many years ago? Some time ago I did a comparison test for a club event by priming a batch with cane sugar, corn sugar and DME, adjusting the amounts to their fermentability. No one could tell the difference between the corn and cane sugar, while the DME bottles sometimes got

knocked for being too sweet or "thick."

How would you address the fact that many Belgian brewers use pounds of cane sugar in their beers? Would you say all these have cidery flavors?

It seems that the brewer who posed the original question in your column probably had an under attenuated beer to begin with, though it's difficult to say with the provided information. (He doesn't note if the beer is properly carbonated....)

Thanks! Michael Shannon BJCP certified

Dear Michael Sir, You are asking some damned good questions! I admire questions.

Here are my replies:

1. My point about "more readily fermentable" is that dextrose is "invert" already. Sucrose gets inverted by yeast and then fermented. This is what I recall from having stated thusly in my books of yesteryears when I confirmed the information. My hunch that when cane rather than corn sugar is used in quantities that are not balanced with good malt character and proper fermentation (which is simple to do and simple to avoid as a homebrewer) is that the yeast's inverting process can produce flavor compounds known as apple-like and cidery. I still encounter these characters in areas of the world that are still learning about better homebrewing techniques.

2. Using cane or corn sugars for priming in such relatively small amounts is not going to have detectable flavor impact. However using malt as a priming agent can have a flavor impact if proper techniques are not used. Cane and dextrose do not require as much oxygen uptake as malt fermentation. Thus if you are going to use malt extract or unfer-

mented wort it is best practice to culture up and add a well oxygenated yeast. The easiest way is to take the measured amount of wort you wish to add as priming sugar and introduce yeast. Aerate it well and let the yeast uptake the oxygen for about 12 hours and then pitch this into your to-be-carbonated finished beer. If you don't do this, you will still get great beer, but it may be less carbonated than expected and under attenuated as you described in your experiment. Personally, corn sugar is simple dimple and easy as pie. Do what you love to do.

3. Belgian brewers use gobs of sucrose. They also have great and healthy yeast, and know how to add enough malt character and properly age their beers to counter any potential cider-like effects of sucrose. Try this for an exaggerated brew: Make 5 gallons of light beer with 4 pounds of cane sugar and 1 pound of malt extract or scale down to 1 gallon batch. Yum!

I think that during the inverting process there are flavor byproducts that are the "apple"-like flavors.

Michael, thanks for justifying my job, The Professor, Hb.D.

# **Nano Homebrewing Systems**

Dear Professor,

I'm a homebrewer of 20 years. I make beer in my kitchen on the full moon. I've been improving my beer along the years. Homebrewing has changed, from the time I started making my own brown ales, light fruit beers, all-grain double wheat beer and Munich amber ales.

I also tried some brew-on-premises where I could use my recipes. I want to refine my recipes and have more continuity in my creations. Is there an all-in-one brewing system out there you can recommend, which can give me consistency and accu-



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Sleeping Lady Brewing Co./ Snow Goose Restaurant Anchorage

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Old Chicago Chandler, Tuscon

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Glendale, Phoenix (2), Scottsdale

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Bootleggers Brewery Fullerton

E.J. Phair Brewing Co. & Alehouse Concord

Firestone Walker Brewing Co. Paso Robles

Firestone Walker Taproom Restaraunt

Restaraun Buellton

Gordon Biersch Brewery

Restaurant Burbank, Palo Alto, Pasadena, San Diego, San Francisco, San Jose

Huntington Beach Beer Co. Huntington Beach

Iron Springs Pub & Brewery

O'Brien's Pub San Diego

Pyramid Alehouse, Brewery & Restaurant

Rock Bottom Restaurant & Brewery

Campbell, La Jolla, Long Beach, San Diego

Rogue Ales Public House San Francisco

Russian River Brewing Co. Santa Rosa

Santa Barbara Brewing Co. Santa Barbara

Schooners Grille and Brewery Antioch

Stone Brewing Co./Stone Brewing World Bistro & Gardens Escondido

# COLORADO

Avery Brewing Co. Boulder

Backcountry Brewery

BJ's Restaraunt & Brewery Boulder

BJ's Restaraunt & Brewhouse Aurora, Westminster

Breckenridge Brewery Denver

Breckenridge Brewery & Pub Denver

Boulder Beer Co. Boulder

Dillon Dam Brewery Dillon

Dry Dock Brewing Co. Aurora

Glenwood Canyon Brewing Co. Glenwood Springs

Gordon Biersch Brewery Restaurant Broomfield

Great Divide Brewing Co. Denver

Great Northern

Hops Grillhouse and Brewery Golden, Littleton, Northglenn Left Hand Brewing Co. Longmont

New Belgium Brewing Co.
Fort Collins

Odell Brewing Co.
Fort Collins

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# OHACI

Old Chicago Boise (2)

# ILLINOIS

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Flossmoor Station Brewing Co. Flossmoor

Goose Island Beer Co. Chicago (2)

Granite City Food and Brewery Cherry Valley, East Peoria, Orland Park

Mickey Finns Brewery Libertyville Old Chicago Rockford

Rock Bottom Restaurant &

Brewery Chicago, Lombard, Orland Park, Warrenville

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Granite City Food & Brewery Fort Wayne, Mishawaka

J. Gumbo's Ale House and Grill Indianapolis Power House Brewing Co.'s

Columbus Bar Columbus Rock Bottom Restaurant &

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# Bloomington

IOWA Court Avenue Brewing Co. Des Moines

Granite City Food and Brewery Cedar Rapids, Clive, Davenport

Millstream Brewing Co Amana

Old Chicago Bettendorf

Raccoon River Brewing Co. Des Moines

Rock Bottom Restaurant & Brewery West Des Moines

Sherwood Brewing Co. Shelby Twp

# KANSAS

Goebel Liquor (Rob's Other World) Wichita

Granite City Food and Brewery Kansas City, Olathe, Wichita (East), Wichita (West)

Old Chicago

Lawrence, Lenexa, Manhattan, Olathe, Overland Park, Topeka, Wichita (3)

# KENTUCKY BJ's Restaurant & Brewhouse Oxmoor

LOUISIANA
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racy in flavor, body, and alcohol percentage? One with ease of application, few breakdowns, some kind of Nano brewing system suitable for homebrewing? Or do I have to jump up to a brewhouse size system, which is out of my price range?

Vicnic Ales Castro Valley, Calif.

Hello Vicnic, There are several "nano systems" out there. You live in the Bay Area I see. You must drop by the American Homebrewers Association's National Homebrewers Conference June 18-20 at the Oakland Marriott Hotel. You live five minutes away! There you will see some great systems on display. Affordable? That's all relative. Good ones are not cheap, but they do have value. Many professional craft brewers buy these systems as pilot breweries and develop recipes for full production. Take a look at the advertisements in this magazine and do a search online for "homebrewing systems." You'll get a preview of things to see in Oakland.

See you there or be square, The Professor, Hb.D.

# Carbonated Strong Ale

Dear Professor,

I have completed an 11-percent barley-

wine that is the best I have ever done for balance, taste and clarity, and it is now racked to the secondary. What is the best procedure for adding yeast at the time of bottling to enhance and ensure carbonation yielding a large head to the beer? Normally at higher alcohol levels of beer it is extremely hard to get a lot of carbonation for a heavy foam build after pour. Any suggestions? What's the best yeast to use and how much should I use to inoculate each bottle?

Your advocate reader, Bill Andersen North Carolina



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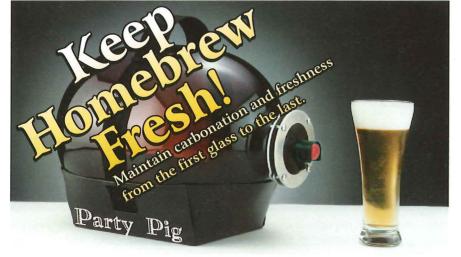
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Dear Mr. Bill,

Rehydrate some quality dried yeast that's known to be alcohol tolerant. It can be either lager or ale, but that depends on the conditioning temperatures. Cool temperatures, use lager yeast. Temperatures above 70° F, ale yeast is okay. You could even use champagne yeast if in doubt.

Again, rehydrate the yeast in pre-boiled and cooled-to-100° F water for 10 minutes and then add a few drops into each bottle.

With regard to which sugar to use for priming, I would use corn or cane sugar boiled in a small amount of water and added to the entire racked batch. Malt extract as priming will reduce the odds of carbonation you would be happy with.

That's it and should work, The Professor, Hb.D.

Hey homebrewers! If you have a brewing-related question for Professor Surfeit, send it to "Dear Professor," PO Box 1679, Boulder CO 80306-1679; fax 303-447-2825; or e-mail professor@brewersassociation.org.





# American and English Barleywines

he Club-Only Competition for March/April 2009 allows any entry with an original gravity of more than 1.080, but since there are no fewer than 21 subcategories to choose from, we will focus on the only ones whose minimum original gravity is above 1.080: American and English Barleywines. These heavyweights are differentiated mainly by malt and hop emphasis: English barleywines are known for multi-layered malt depth, even though they may still be quite hopheavy, while American barleywines often showcase Pacific Northwest varieties of hops in all their chewy, resinous glory. It is worth noting that unlike double or Imperial American India Pale Ales, American barleywines still retain a rich, malty body to balance the hops, and may contain caramel (or caramelized) flavors and aromas.

English barleywines are like extremely strong Old Ales or Stock Ales, and since their emphasis is usually more on malt

than hops, they are often aged for a significant period before their release. They can also tolerate months and often years of additional cellaring, developing port wine or sherry complexities and mellow alcohol smoothness. Many commercial examples are vintage dated.

Thanks to traditional English yeast varieties used, they can also have a significant fruitiness in the flavor and aroma, usually

of the fig, date, raisin and other dried fruit variety. There can also be some bready, caramel malt character, and of course lots of residual malt sweetness, though they should never be overly sweet or cloying. Color ranges from full gold to dark brown, with good to low head retention, depending on how long they are aged. Carbonation can vary from low to moderate. Some chill haze may be present, but again thanks to aging, clarity usually

# **English Barleywine**

# **Ingredients**

for 5.5 U.S. gallons (21 L) with a 3.5-U.S. gallon (13.25 L) boil

<ul> <li>1.0 lb (0.45 kg) Coopers         Light Dry Malt Extract</li> <li>0.5 lb (0.23 kg) English Crystal Malt         (750 L)</li> <li>0.5 lb (0.23 kg) English Crystal Malt         (1500 L)</li> <li>1.5 oz (43 g) Horizon hops,         13% alpha acid (60 min)</li> <li>0.5 oz (14 g) Golding hops,         4.75% alpha acid (20 min)</li> <li>0.5 oz (14 g) Golding hops,         4.75% alpha acid (0)</li> </ul>	4 cans	(13.2 lb, 6.0 kg) Coopers Light Malt Extract
(750 L)  0.5 lb (0.23 kg) English Crystal Malt (1500 L)  1.5 oz (43 g) Horizon hops, 13% alpha acid (60 min)  0.5 oz (14 g) Golding hops, 4.75% alpha acid (20 min)  0.5 oz (14 g) Golding hops,	1.0 lb	
(1500 L)  1.5 oz (43 g) Horizon hops, 13% alpha acid (60 min)  0.5 oz (14 g) Golding hops, 4.75% alpha acid (20 min)  0.5 oz (14 g) Golding hops,	0.5 lb	, ,
13% alpha acid (60 min)  0.5 oz (14 g) Golding hops, 4.75% alpha acid (20 min)  0.5 oz (14 g) Golding hops,	0.5 lb	0, 0 ,
4.75% alpha acid (20 min) <b>0.5 oz</b> (14 g) Golding hops,	1.5 oz	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
( 0)	0.5 oz	( 0,
	0.5 oz	( 0,

4 packages Wyeast 1028 London Ale

London Ale Yeast Coopers Brewery Carbonation Drops for bottling

Yeast or White Labs WLP013

Original Specific Gravity: 1.092 Final Specific Gravity: 1.024

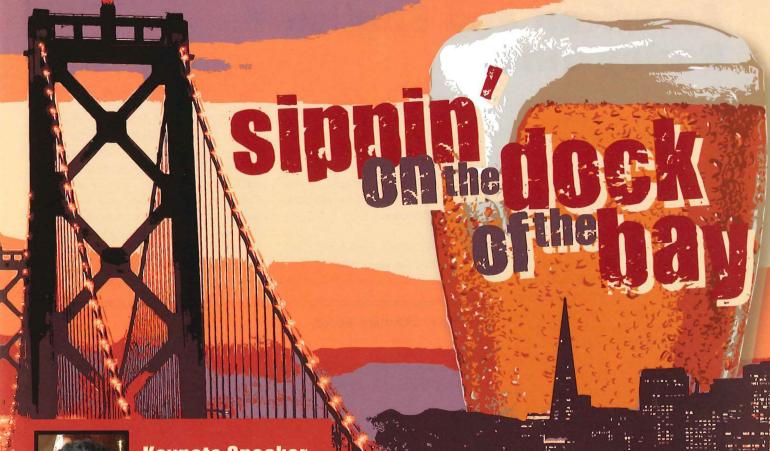
SRM: 18.3 IBU: 47.5 ABV: 9.2%

# **Directions**

Steep grains in 1.5 gallons (5.68 L) of cool water, heat to 150° F (65° C), strain and sparge with 2/3 gallons (2.5 L) hot water. Stir in malt extract and bring to a boil. Add the first hops and boil. After 40 minutes, add the second hops and continue to boil. Add the third hop addition at the end of the 60-minute boil. Chill the wort if possible, or pour into the fermenter with enough cold water to make 5.5 gallons (21 L). Aerate well and when the temperature drops to 68° F (20° C), pitch the yeast (use four packages of liquid yeast or a yeast starter). Ferment at 68° F (20° C) for two weeks, and then transfer to the secondary fermenter. Age several weeks to months. Bottle with Coopers Brewery Carbonation drops. Allow bottles to carbonate at 70° F (21° C) for at least a month. Serve at 50-54° F (10-12° C).



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# AMERICAN HOMEBREWERS ASSOCIATION CLUB-ONLY COMPETITION

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# Beers with OG > 1.080

Entries are due March 28, 2009. Judging will be held April 4, 2009. Entry fee is \$7. Make checks payable to American Homebrewers Association.

# **Entry Shipping:**

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Hosted by Susan Ruud and the Prairie Homebrewing Companions of Fargo, N.D. For more information, contact Susan Ruud at Susan.Ruud@ndsu.nodak.edu.

becomes pretty good as the beer warms. English hops are obviously favored for the most authentic profile, with IBUs ranging from 35 to 70.

American barleywines allow a greater range of hop expression, and many are late- and dry hopped for extra aroma. Bitterness levels range from 50 to 120 IBUs, significantly higher than their English cousins, and while hop variety is not limited to American types, they are often preferred. These beers are also much more likely to be served young, to preserve that late hop signature, as it will subside with age. This also should lead brewers to consider alcohol warmth, which is acceptable, and alcohol heat, fuminess or harshness, which is not. Some amount of oxidation may be present, but hops generally mask the more subtle sherry-like tones common in the English style. Like English barleywine, these beers often represent the strongest offering from the commercial or home brewery, and are associated with the winter or holiday brewing season.

For either style, kettle caramelization is unavoidable with this high an original gravity, so all-grain brewers should rely most heavily on pale malts in the grist—significant color and flavor will be developed during the boil, so dark and special-

ty malts should be used with caution and restraint. Due to the sheer amount of malt necessary to achieve the minimum gravity of 1.080 (and it can range upwards to 1.120), all-grain brewers may want to consider the addition of pale malt extract. Adjuncts are generally not used for these beers, though some brewers add honey or brewing sugars to bolster alcohol.

Yeast with good alcohol tolerance and moderate to good attenuation will result in a finishing gravity of 1.018 to 1.030, though the bigger finishing beers should

have enough hop bitterness to keep them drinkable. Alcohol dryness can also play a big part in balancing sweetness, so low mash temperatures are usually a safe way to encourage thorough attenuation—8 to 12 percent by volume is typical. Fresh, healthy yeast in huge quantities is essential to avoid a stuck ferment, and bottling with a bit of wine yeast is usually not a bad idea.

Amahl Turczyn Scheppach is a former craft brewer and associate editor for Zymurgy, and now brews at home in Lafayette, Colo.

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'07 Bronze GABF, Imperial Nut Brown Ale, Specialty Category

'07 Bronze GABF, Butt Head Bock, Bock Category

'06 Bronze GABF, Maple Nut Brown Ale, Specialty Category

'06 Silver World Beer Cup, Jack Whacker Wheat Ale, Herb & Spice Category

'06 Gold World Beer Cup, Butt Head Bock, Dopplebock Category

'05 Silver GABF, Jack Whacker Wheat Ale, Herb & Spice Category
'03 & '04 Gold GABF, Butt Head Bock, Dopplebock Category

103 Brange CARE Manie Nut Braum Ale Cassistry Category

'03 Bronze GABF, Maple Nut Brown Ale, Specialty Category

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As a homebrewer, you have already taken one of the most important steps down the path of sustainability: you've asserted control over the food you consume. You have already come. of packaging, shipping and waste. So feel good about how far you have already come.

Fortunately, homebrewing and craft brewing are filling the void left by the growth of global brewing companies, and similarly, a new generation of small-scale family farmers is taking to the fields for organic and other sustainable farming practices.

a modern reinheitsgebot

Renate Künast, the former German Minister for Agriculture, vowed to make 20 percent of German agriculture organic by 2010, commenting that Germans must develop the same reverence for their environment as they have always had for their beer. This last remark refers to the German Beer Purity act of 1516, aka the Reinheitsgebot.

But just as the Reinheitsgebot failed to include yeast as a permissible ingredient in beer (its existence was unknown at the time), neither did it mention the use of chemicals in the growing of brewing ingredients. A beer purity law in the modern age would require such a restriction. Homebrewers and craft brewers generally shun chemical additives and preservatives during brewing, but our ingredients are laden with chemical inputs.

Let's peer at conventional farming through beer-tinted glasses. Most hops and barley are produced using conventional green revolution methods. As a homebrewer, you have already taken one of the most important steps down the path of sustainability: you've asserted control over the food you consume. You have also eliminated a lot of packaging, shipping and waste. So feel good about how far you have already come.

The levels and types of pesticides legally allowed vary greatly from one country to the next. For example, Germany and the

# organic framboise saison

# Jim Maurer, Colorado Top scoring entry, Western Division (40.33 out of 50) National Organic Homebrew Challenge

Ingredients for 5 U.S. gallons (19 liters)

5.0 lb	(2.26 kg) Gambrinus organic Pilsner malt
1.67 lb	(0.75 kg) Weyermann organic Munich malt
1.25 lb	(0.56 kg) organic cane sugar- carmelize 4 oz of sugar before adding to the boil
1.25 lb	(0.56 kg) organic wildflower honey
1.67 oz	(47 g) organic Goldings hops (75 min)
0.8 oz	(23 g) organic Saaz hops (10 min)
0.4 oz	(11 g) organic sweet orange peel (5 min)
0.4 oz	(11 g) organic lemon peel (5 min)
3.75 lb	(1.70 kg) organic fresh raspberries (secondary)
	Wyeast 3711 French Saison yeast
I Tbsp.	gypsum added to boil
I tsp.	Irish moss added last 15 minutes of boil

Original Gravity: 1.060 Final Gravity: 1.002

# Directions

Use a single infusion mash at 149° F (65° C) for 75 minutes. Mash out at 169° F (76° C) for 20 minutes. Fly sparge at 185° F (85° C) with 2.5 gallons (9.46 L) of water. Boil time is 90 minutes adding hops and spice as indicated in recipe. Pitch a starter of Wyeast 371 IPC French Saison yeast into 72° F (22° C) wort. Fermentation (Open): 12 days at 72° F (22° C), then rack to secondary with fruit (Closed) for 9 days at 72° F (22° C). Rack off fruit to bottling bucket with 3.33 oz (94 g) of corn sugar (equivalent of 2.70 volumes of carbon dioxide) and add 50 ml slurry of Wyeast 1056 American Ale Yeast at bottling. Condition for 14 days at 72° F (22° C).

# **Extract Version**

Substitute 5 lb (2.26 kg) of Briess organic light liquid malt extract for Pilsner and Munich malts. Stir extract, sugar and honey into 2 gallons of water and bring to a boil. Boil for a total of 60 minutes. Add 2.5 oz (71 g) of Goldings hops and gypsum at start of the boil. When 15 minutes remain, add Irish moss. When 10 minutes remain, add Saaz hops. When 5 minutes remain, add orange and lemon peel. After 60 minutes of boil, strain wort into a fermenter with enough cold water to make 5 gallons (19 L). Pitch a starter of Wyeast 371 IPC French Saison yeast into 72° F (22° C) wort. Fermentation (Open): 12 days at 72° F (22° C), then rack to secondary with fruit (Closed) for 9 days at 72° F (22° C). Rack off fruit to bottling bucket with 3.33 oz (94 g) of corn sugar (equivalent of 2.70 volumes of carbon dioxide) and add 50 ml slurry of Wyeast 1056 American Ale Yeast at bottling. Condition for 14 days at 72° F (22° C).

U.S. have wildly different regulations on the pesticides allowed to be used on hops. According to Dr. Adrian Forster: "From altogether 80 available hop spraying agents, 40 are licensed in Germany at the moment and 11 in the USA. Only six [of these agents] are licensed in both countries. Consequently five agents licensed in the USA may not be used in Germany and 34 sprayings licensed in Germany may not be applied in the USA." In other words, many of the chemicals sprayed on hops in Germany are illegal in the U.S. and vice versa.

Paraquat, for example, has been banned or severely restricted in dozens of countries, including the entire European Union, and it is included on Pesticide Action Network's "Dirty Dozen" list of the worst pesticides. But it is still allowed in the US. Endothall is a highly toxic herbicide also allowed on U.S.-grown hops but according to Environmental Defense, it is suspected of causing kidney and blood damage in humans. There is an equally vast variety of chemicals applied to barley. Glyphosate, the active ingredient in RoundUp, has been linked to illnesses such as non-Hodgkin's lymphoma, and actually increases the susceptibility of crop plants to a number of diseases. Glyphosate residues are found in food long after their application in the field. In one study, barley planted a year after treatment still contained residues at harvest time.

# "lachrymator" smoked beer

Valdymar Kopec, New York Top scoring entry, Eastern Division (43.7 out of 50) National Organic Homebrew Challenge

Ingredients for 5 U.S. gallons (19 liters)

13.0 lb	(5.8 kg) Gambrinus organic Munich malt
2.0 lb	(0.90 kg) Gambrinus organic wheat malt
2.0 lb	(0.90 kg) organic Gambrinus Munich- home smoked using oak chips
12.0 oz	(340 g) home toasted organic Gambrinus Munich
8.0 oz	(226 g) Weyermann organic CaraMunich
1.0 oz	(28 g) organic NZ Hallertauer whole hops (90 min)
1.0 oz	(28 g) organic NZ Hallertauer whole hops (45 min)
	Wyeast 2206 Bavarian Lager Yeast
	Bottled with 1/3 cup organic dextrose

Original Gravity: 1.079 Final Gravity: 1.028 Mash efficiency about 70%

# **Directions**

Mash in for a protein rest at around 121° F (49° C) for 20 minutes. Employ a double decoction mash with rests at around 142° F (61° C) for 30 minutes and 152° F (67° C) for about 45 minutes. No mash-out. Boil for total of 90 minutes. Decant cool wort onto yeast cake from previous brew, or make a large starter. Ferment for about 8 weeks at  $52^{\circ}$  F (11° C). No secondary.

# **Extract Version**

The malt bill for this recipe does not lend itself to organic extract brewing.

# SOURCES FOR ORGANIC EXTRACT

Seven Bridges www.breworganic.com

Northern Brewer www.northernbrewer.com/malt-extract.html

Ask your local shop if they carry organic ingredients.

As a homebrewer, you are part of the environmental solution. And don't worry, using conventional ingredients won't cause you to spontaneously combust, but if you are considering trying out organic brewing ingredients, now you have plenty of reasons to give it a go.

what makes a beer organic?

Think about it like this: beer was always organic until the green revolution occurred around the middle of the 20th century. Modern organic beers are no different, in principle, from every beer that preceded them except the ones produced by large commercial breweries in the past 65 years or so.

To get slightly more technical, the International Federation of Organic Agriculture Movements (IFOAM), the global regulatory body for organic certification, defines organic agriculture as: "...a production system that sustains the health of soils, ecosystems and people. It relies on ecological processes, biodiversity and cycles adapted to local conditions, rather than the use of inputs with adverse effects. Organic agriculture combines tradition, innovation and science to benefit the shared environment and promote fair relationships and a good quality of life for all involved." In short, it is an approach that attempts to work with nature, instead of against it.

In the U.S., the term "organic" is regulated by the Department of Agriculture's (USDA) National Organic Program, denoting products made in accordance with the Organic Foods Production Act. In addition to the natural practices described above, food products labeled organic must also be non-

# Making organic homebrew is no different than making regular homebrew. Just start with fresh, organic ingredients and the rest is the art and science of homebrewing—same as usual.

# organic IPA

# Keith Antul, Massachusetts 1st Place, Best of Show | National Organic Homebrew Challenge

Ingredients for 5 U.S. gallons (19 liters)

ewage sludge—a common	11.5 lb	(5.21 kg) Briess organic two-row	
conventional farming. Since	8.0 oz	(226 g) Briess organic Caramel 20L	
rket for certified organic prod-	8.0 oz	(226 g) Gambrinus organic Munich	
n growing by 20 percent or	8.0 oz	(226 g) Gambrinus organic white wheat malt	
	4.0 oz	(113 g) Great Western organic crystal 60L	
r and this rate is expected to	0.5 oz	(14 g) Organic NZ Pacific Gem pellet hops (60 min.)	
oming years. Total global sales	0.5 oz	(14 g) Organic NZ Pacific Gem pellet hops (20 min.)	
oillion in 2005. It is by far the	0.4 oz	(11 g) Organic U.K. First Gold pellet hops (20 min.)	
ig segment of the food market	6.0 oz	(17 g) Organic U.K. First Gold pellet hops (10 min.)	
Every food category now has	1.0 oz	(28 g) Organic NZ Cascade pellet hops (1 min.)	
otion.	1.0 oz	(28 g) Organic NZ Cascade pellet hops- dry hop for 7 days	
	I tsp.	Irish moss (10 min.)	
s growth includes an ever-		Wyeast 1056 American Ale Yeast	

Original Gravity: 1.060 Final Gravity: 1.014

Brewer's Comment

This makes a somewhat dry IPA with restrained malt character. The blend of citrusy Pacific Gem/Cascade with the earthier First Gold hops strikes a nice balance; definitely hop-forward, but highly drinkable.

# Directions

Prepare a IL starter made with one pack of Wyeast 1056, about 24 hours before pitching. Use a single infusion mash, held at 152° F (67° C) for one hour. Boil time is one hour. Pitch yeast at 67° F (19° C). Ferment at 67° F (19° C). Use single-stage fermentation and add dry hop after the vigorous part of the fermentation subsides, generally once the kraeusen has fallen. After fermentation is complete, crash the temperature down to around 40° F (4° C). After about a day, rack to keg and force carbonate. At the time of kegging, the beer is still quite green and is pretty much at its prime two weeks later.

# Extract Version

Substitute 8 lb (3.63 kg) of Briess organic light liquid malt extract for two-row, Munich, and wheat malts, and increase 60 minute hop addition to 0.75 oz (21 g). Prepare a 1L starter made with one pack of Wyeast 1056, about 24 hours before pitching. Steep caramel and crystal malts in 2 gallons (7.6 L) of water for 30 minutes at 165° F (74° C), then strain with 0.5 gallons (1.9 L) of hot water. Stir in extract and bring to a boil. Add hops and Irish moss as indicated in the recipe. After a 60 minute boil, strain into a fermenter with enough cold water to make 5 gallons. Pitch yeast at 67° F (19° C). Ferment at 67° F (19° C). Use single-stage fermentation and add dry hop after the vigorous part of the fermentation subsides, generally once the kraeusen has fallen. After fermentation is complete, crash the temperature down to around 40° F (4° C). After about a day, rack to keg and force carbonate. At the time of kegging, the beer is still quite green and is pretty much at its prime two weeks later.

genetically modified and may not be fertilized with se practice in co 1990, the marl ucts has been more per year increase in cor topped \$33 bi fastest growing in America. Ev an organic opt

Happily, this expanding array of organic beers, breweries, and restaurants around the world, particularly in North America and Europe. Restaurant Nora in Washington D.C. was the first restaurant in America to become certified organic—everything from the tablecloths to the beer is organic. The second U.S. restaurant to become certified organic was a brewpub! Ukiah Brewing Company, in Ukiah, Calif., specializes in homemade organic beers, complementing a full organic dining menu, and a live music scene.

brew organic

Making organic homebrew is no different than making regular homebrew. Just start with fresh, organic ingredients and the rest is the art and science of homebrewing—same as usual. The one big challenge is finding those ingredients. A handful of homebrew suppliers now stock organic malts and a few offer organic hops. But the first thing you'll notice is that the variety is limited compared to conventional ingredients.

Seven Bridges, a cooperative in Santa Cruz, Calif., has been marketing organic homebrewing supplies since 1997. At the time of this writing, they offered 15 varieties of hops, most of which were available in pel-

# If a glass can make a wine taste better, imagine what it can do for a great beer.

The sole focus of this glass is to maximize the flavor of Samuel Adams® Boston Lager.

-Jim Koch, Founder & Brewer

# LIP · · · · ·

Turned outward to deliver beer to the front of the tongue, where the sweetness (malt) is tasted.

# TURBULATOR

Bead inside rim creates turbulence to release flavor and aroma as beer enters mouth.

# **BOWL**

Rounded shape collects aromas.

# GRIP .

The concave shape reduces heat transfer from your hand.

# · WALLS

Thinner walls and rounded shape maintain proper beer temperature longer.

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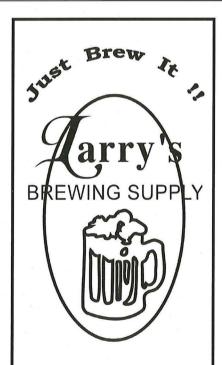
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# "stout trousers" american stout

# Ben Miller, New Mexico 2nd Place, Best of Show | National Organic Homebrew Challenge

Ingredients for 5 U.S. gallons (19 liters)

11.5 lb	(5.21 kg) Great Western organic 2-row malt
0.75 lb	(340 g) Briess organic roasted barley
8.8 oz	(249 g) Briess organic chocolate malt
8.8 oz	(249 g) Briess organic Caramel 60
3.2 oz	(90 g) Weyermann organic Carafa 2
0.75 oz	(21 g) NZ organic Pacific Gem hops (60 min)
1.5 oz	(42 g) organic Fuggles hops (15 min)
1.5 oz	(42 g) organic NZ Cascade hops (10 min)
1.0 oz	(28 g) organic NZ Cascade hops (5 min)
l tsp	Irish moss (10 min)
	Wyeast 1272 American Ale II Yeast

Original Gravity: 1.072 Final Gravity: 1.018 Mash Efficiency: 80%

# Directions

Mash the grains at 154° F (68° C) for I hour. Do not use soft water for this brew. Add calcium if you are using reverse osmosis or spring water. Acidify the strike water to a pH of 4.8. This should result in a mash pH of 5.2. Also acidify the sparge water to 4.8. Boil for 100 minutes adding hops and Irish moss as indicated in recipe. When boil is complete chill to 64° F (18° C). Pitch slurry from a 3 liter starter of Wyeast 1272 yeast. Ferment at 64° F (18° C) for I day, then raise to 66° F (19° C) until fermentation is 75% complete. Raise to 70° F (21° C) for an additional week. Crash to 40° F (4° C) for a day or two, then bottle or keg.

# **Extract Version**

Substitute 9 lb (4.08 kg) of Briess organic light liquid malt extract for two-row malt, and increase 60 minute hop addition to 1.25 oz (35 g). Steep grains in 2 gallons (7.6 L) of water for 30 minutes at 165° F (74° C), then strain with 0.5 gallons (1.9 L) of hot water. Stir in extract and bring to a boil. Add hops and Irish moss as indicated in the recipe. After a 60 minute boil, strain into a fermenter with enough cold water to make 5 gallons (19 L). When temperature drops to 64° F (18° C), pitch slurry from a 3 liter starter of Wyeast 1272 yeast. Ferment at 64° F (18° C) for 1 day, then raise to 66° F (19° C) until fermentation is 75% complete. Raise to 70° F (21° C) for an additional week. Crash to 40° F (4° C) for a day or two, then bottle or keg.

# NATIONAL ORGANIC HOMEBREW CHALLENGE

For the past two years, Seven Bridges has hosted the National Organic Homebrew Challenge, an American Homebrewers Association registered homebrew competition.

The rules are simple:

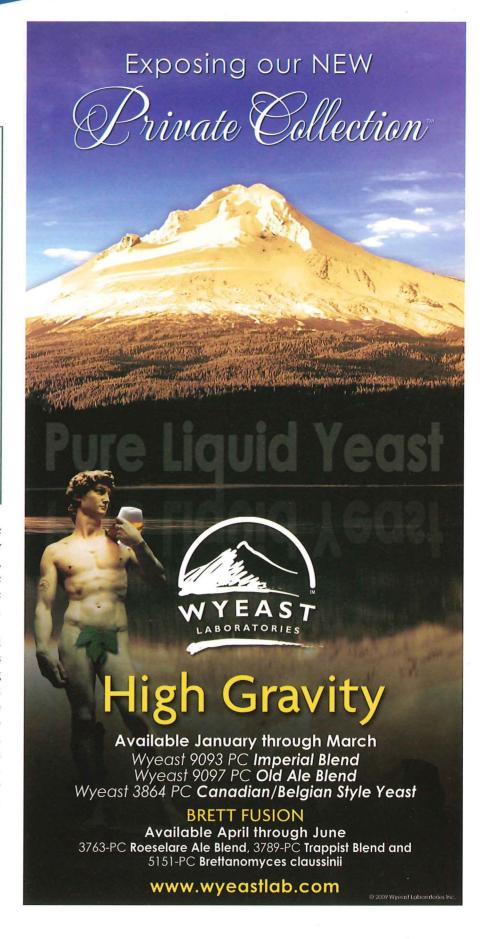
- Brew a batch of organic homebrew using all organic ingredients.
- Submit entries on time (in 2008 they were due between September 1 and October 10).
- 3. Entries must include three bottles.
- 4. Competition fee is \$6.
- Entries are judged according to styles set by the Beer Judge Certification Program.

There are two grand prizes available, one each for the Eastern and Western division winners. These lucky homebrewers get a full "organic brewing experience"—a day in the brewhouse with a professional organic brewer in their region, which were Clipper City in Baltimore (brewers of Oxford Organic Ales) and Eel River in Fortuna, Calif., the first certified organic microbrewery in America.

let or whole leaf. There were 20 malts, one liquid extract and one dry extract. Plus they offer a number of adjunct grains (oats, rye, wheat, quinoa, buckwheat, millet), rice syrup, flavor concentrates, sugar, and a wide array of organic brewing herbs and spices.

One potential positive spin on the limited choice of hops and malts is that it makes for better brewers. Say you are attempting a beer that calls for a hop variety that is not available as organic. Now you need to understand the role of that ingredient so you can seek a suitable replacement from among the organic offerings. Necessity is the mother of invention. Just see the sidebar about the National Organic Homebrew Contest for proof that world-class beers are being made with organic ingredients.

Chris O'Brien co-owns Seven Bridges, an organic brewing supplier. He is the author of Fermenting Revolution: How to Drink Beer and Save the World, and he blogs at www.BeerActivist.com.



23)

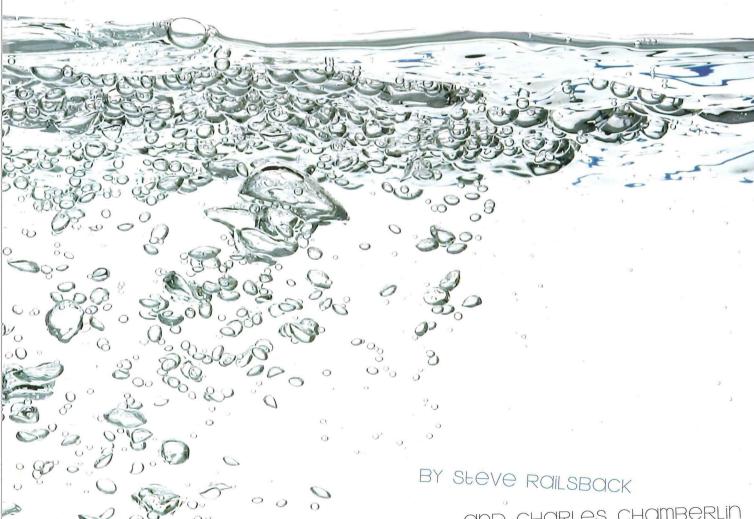
www.beertown.org March/April 2009 ZYMURGY

# LOW-energy Homebrewing

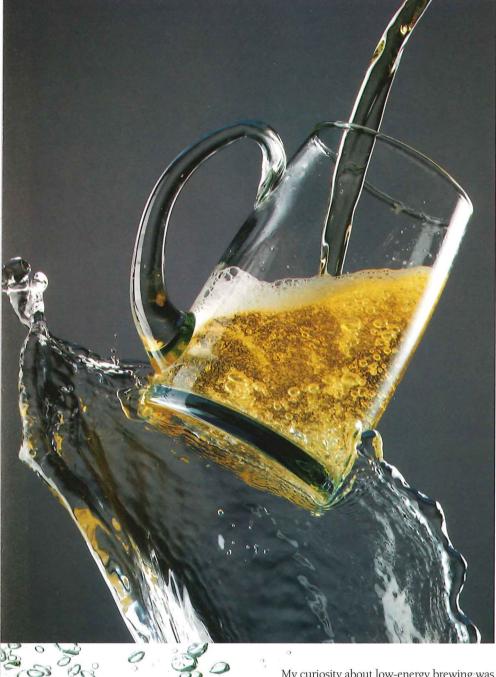
Can You use Fewer Resources and Still Brew Good Beer?



omebrewing takes a lot of energy and water. As climate changes and water shortages become more and more prominent, I get less and less comfortable cleaning equipment in lots of hot water, boiling gallons of wort, then using more water to cool the wort by flushing all that heat I just put into it down the drain. So I started thinking about low-energy brewing: is it really necessary to use all that energy and water?



and charles chamberlin



My curiosity about low-energy brewing was also piqued by noticing over the years that no matter how much time and energy I put into careful brewing, the only time the quality of my brew made a major, consistent improvement was when pure liquid yeast cultures became available. What if the only thing I really needed to make a good brew was good yeast? Did that mean I could cut out a lot of the time-, energy-, and waterconsuming steps and still brew something I could enjoy and even share with friends?

That question nagged at me until last year when I finally started experimenting. My experience in ecological research has taught me that if you want an experiment to produce clear results, don't fool around with

small changes—instead, really give the system a jolt. So for my first batch of Low Energy Ale I decided to ignore all kinds of conventional brewing wisdom, including the importance of boiling as much of the batch as possible, keeping up a full boil for at least an hour, cooling wort quickly, and using secondary fermentation.

Instead, my goal was to get a batch of my "house" English mild ale (6 pounds of light malt extract and a pound of high-lovibond crystal malt, with a couple ounces of Fuggle-like hops) into a keg with as little energy as possible. For a 5-gallon batch, I steeped the crystal malt and dissolved the malt extract in only 1 gallon of water. I boiled this gallon for a measly 15 minutes, the minimum I figured it would take to extract hop bitterness. Instead of using a wort chiller, I simply let the boil sit in its pot for an hour or so with the lid on, then set it in a bigger pot of cold tap water for a few minutes. By the time I added the remaining 4 gallons of tap water, the temperature was low enough to pitch the yeast.

I skipped secondary fermentation, transferring the beer from the primary directly into a keg after 12 days. I added some oak chips as a flavor adjunct; normally, these are sterilized by boiling and are added to the secondary fermenter but instead I just threw them in for the last 10 minutes of the boil and strained them out with the hops as the wort went into the fermenter.

The first conclusion I drew from this experiment was that "low energy" applies to the brewer as well as to the utility bill: this batch took a lot less time and effort, leaving me more energy to, well, relax and wonder about how the product would turn out while doing some baseline sampling so I would be ready to compare.

Did the shortcuts I took in this Low Energy Ale really save much energy of the kind that causes climate change? I asked my friend Charles Chamberlin of Humboldt State University's Schatz Energy Research Center to help me think about how the different processes we use in homebrewing consume energy or otherwise affect the environment, and what we can do about it. Chamberlin rummaged through the scientific literature and we spent an afternoon

experimenting in the brew kitchen. Here's what we came up with.

# BOILING WORL

We've all noticed that it takes a lot of heat to bring several gallons of water to a boil. Water is an unusually energy-dense liquid: it takes much more energy to raise its temperature than it does to heat other liquids such as cooking oil. And when we finally get water to the boiling point, it takes even more heat for it to overcome the "latent heat of vaporization" and finally start boiling. Once the boil has started, we can turn the heat down because it takes less energy to just maintain the boil.

What determines the energy it takes to bring a batch of wort to boiling? Unless your heating apparatus is unusually inefficient, the most important factor by far will be the amount of water you boil. Except for the heat lost to the air, the amount of energy used is directly proportional to how much water you boil: boiling 4 gallons should take almost four times as much energy as boiling 1 gallon. (In our experiment using a 6-gallon pot on a regular gas stove, 4 gallons took 3.5 times as much energy as 1 gallon to come to a boil.)

How long you boil also affects energy use: it takes energy to evaporate the water that boils away. But reducing the boiling time saves less energy than reducing the amount of water boiled; boiling for 30 minutes instead of 60 will save far less than half the total cooking energy. But the energy for boiling is still considerable: boiling away 10 percent of the water takes as much energy as bringing the water to a boil.

Loss of heat to the air can be a major energy consumer during the boil. One thing you can do to reduce these losses is to keep the lid on the pot as much as possible. I am leery of this solution after cleaning up countless boil-over messes, but I still keep a lid on at least while bringing the wort up to boiling. And an unexpected benefit of boiling less wort is that it leaves more freeboard in your pot so you can keep the lid on with less risk of a boil-over. Even keeping the lid half-on will reduce the energy lost to evaporation of water while making boil-over less likely. The boiling process does drive off undesirable volatile

# LOW-energy mild ale

INGREDIENTS for 5 U.S. gallons (19 liters)

6.0 lb (2.72 kg) light malt extract

1.0 lb. (0.45 kg) 120 Lovibond crystal malt

2.0 oz. (56 g) Willamette hop pellets

English ale liquid yeast culture, 50 ml package

1/2 cup oak chips

# Directions

Set the malt extract package in the sun for several hours to heat it up, reducing the time and energy spent getting it out of the container. Put the crystal malt in 1 gallon (3.8 L) of cold water and bring it to a boil. Strain the crystal malt out, pouring the wort into a large (4+ gallon) pot. Add the malt extract and dissolve it. Bring the wort to a full boil and add the oak chips and half the hops. Reduce heat and continue boiling for 15 minutes with the lid on. Add the remaining hops and turn off heat.

Let the pot cool with the lid on for about 1 hour. If necessary, depending on tap water and yeast pitching temperature, cool the wort further by setting it in a sink or pot of cold water. Pour the wort into a primary fermenter, straining out the hops and oak chips. Add cold tap water to about 4.5 gallons (17 L). Pitch the yeast, and top off the fermenter to 5 gallons (19 L), mixing and aerating thoroughly with the tap water. Ferment until activity is stopped; I left it for 12 days at 65° F (18° C). Bottle or keg. If priming with sugar, go easy as English-style ales should have low carbonation. I carbonated my batch lightly by putting 15 psi of CO<sub>2</sub> on the keg. If kegged and artificially carbonated, it should be drinkable within a few days.

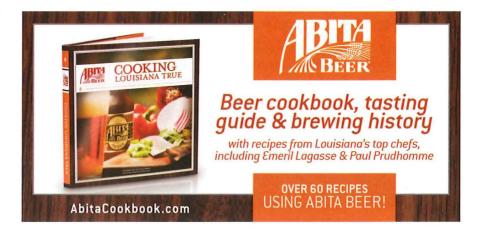
compounds, such as dimethyl sulfide (DMS) which can result in a cooked corn flavor in the finished beer if it is not driven off during the boil, so you may not want to completely cover the top of pot during the boil.

Reducing air flow around your pot will also keep a lot of your heat from blowing away instead of going into the wort. Raising a boil quickly can have energy advantages, but if you set up your boil over a gas jet outside in the breeze or cold weather, you will send

a lot of heat directly to the atmosphere instead of into your brew.

# Washing and sanitizing

If you're like me, you've had a few batches of homebrew ruined by bacterial infection. The brew that you put so much care into, that you thought might turn out to be the best beer ever made, ends up (in my case, for three consecutive batches) tasting like bad root beer and raising enough pressure to power a locomotive. Nothing is more of an energy waste than brewing a batch that





# **AMERICAN HOMEBREWERS ASSOCIATION** 2009 GOVERNING COMMITTEE ELECTION

Your AHA Governing Committee representatives play a critical role for YOUR Association.

The AHA Governing Committee helps develop the benefits and programs of the AHA and provides direction for the AHA Staff.

# PLEASE CAST YOUR VOTE TODAY!

Please read candidate statements and cast your ballot online at www.beertown.org/homebrewing. For the 2009 election, there are six candidates running for three open seats on the Governing Committee.

# CANDIDATES:

☐ Denny Conn – Noti, OR	☐ Michael Fairbrother – Londonderry, NF
☐ Luann Fitzpatrick – Batavia, IL	☐ Janna Mestan – Justice, IL
☐ Curt Stock – St. Paul, MN	☐ Gordon Strong – Beavercreek, OH

# **ELECTION GUIDELINES:**

All balloting will be done online. Go to www.beertown.org/homebrewing, read the candidate statements, and cast your vote. Vote for up to three (3) candidates. You will need to include your name and member number and contact information. If you do not know your member number, or would like to become a member, call us toll free at 888-822-6273 or email info@brewersassociation.org.

All ballots must be submitted no later than midnight Pacific time, March 31, 2009.

All AHA members voting in the election are eligible for an additional entry in the Lallemand Scholarship drawing for Siebel Institute's two-week Concise Course. Check the appropriate box on the ballot to submit your entry into the drawing. The drawing will take place June 20, 2009 at the AHA National Homebrewers Conference in Oakland, Calif.

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you then have to pour down the drain because it went bad. But it takes a lot of energy and water to clean and sanitize equipment sufficiently to prevent such contamination.

Keep in mind that just using water costs energy, too. Water is heavy, which means it takes a lot of energy to pump it to your house and then to pump it back to the wastewater plant when you're done with it.

Clearly, the worst thing you can do is sanitize inadequately and ruin a batch. Especially if you use bottles, a major choice is whether to hand-wash or use a dishwasher. Dr. R. Stammlinger and colleagues at the University of Bonn carefully compared water and energy consumption in hand-washing dishes and pots to using a dishwasher. They learned that if you fill the dishwasher, it uses substantially less water and energy than hand-washing—and does a better cleaning job. So if your equipment fits into your dishwasher efficiently, using the dishwasher should reduce both your resource consumption and contamination risk.

# COOLING WORL

From an energy conservation perspective, the most painful part of brewing is cooling the wort so you can pitch the yeast quickly. You take all that heat you put into the wort and throw it away—and do so by running large quantities of water through a heat exchanger. But this step can also be important for avoiding bacterial contamination that can ruin the batch.

There are several ways to reduce this waste. If you use a conventional chiller that transfers heat from the wort to tap water, you could use the warmed tap water to offset water you would otherwise heat to wash your equipment, yourself, the car, or the dog. Turning down the rate of flow through the heat exchanger reduces the cooling rate but produces warmer exchange water; find a good compromise. Or at least use this water for something you might use cold water for, like watering the garden.

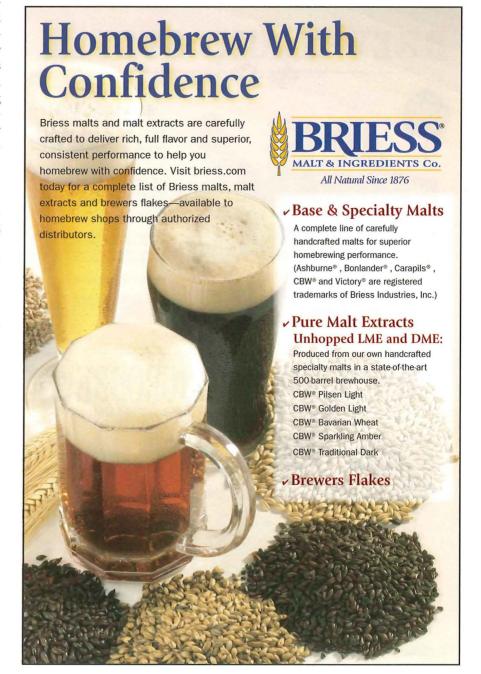
(However, when reusing water, remember that any water with a sanitizing agent such as chlorine or iodine in it is very toxic to many organisms and should go down the drain. Even the chlorine in straight tap water makes it toxic to fish and aquatic organisms, so keep it out of waterways!)

But the most effective way to reduce energy and water losses for wort cooling is to boil less of the wort. Not only do you have less wort to cool, you do not have to cool it to as low a temperature because you will be adding more cold tap water to top off the batch. For example, say you boil 4 gallons for a 5-gallon batch, your tap water is 55° F (12° C), and you want to pitch the yeast at 65° F (18° C). In this case you need to cool the wort all the way down to 68° F (20° C) because the single gallon of tap water you add reduces the temperature by

only 3 degrees. But if instead you boiled only 1 gallon, you would only need to cool it to  $105^{\circ}$  ( $40^{\circ}$  C) because you are adding much more cold tap water. An approximate but useful equation is:

$$T = \frac{(T_b V_b) + (T_t (V_t - V_b))}{V_t}$$

where  $V_b$  is the volume of water boiled,  $V_t$  is the total volume of the batch, T is the temperature of the wort after mixing with tap water to the bring the volume up to  $V_t$ , and  $T_t$  is the tap water temperature.  $T_b$  is the temperature of the boiled wort before



We estimated consumption for a typical 5-gallon homebrewing process and a low-energy alternative.

HOW MUCH ENERGY and water

> can you save?

ergy (Btu) .11,000 0 .2,400 .2,400 .7,200
0 .2,400 .2,400
.2,400 .2,400
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ergy (Btu)
.2,000
0
.2,400
.3,100
.7,500
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# Something's Brewin' at CSU!

Recently, Odell Brewing Co. was proud to donate a new Sabco Brew-Magic System to the Brewing Science and Technology class at Colorado State University.

Brewing authorities, including Doug Odell (left), noticed a "lack of consistency and repeatability" in CBU's old equipment. University officials including professor Jack Avens. Ph.D. Dept. Food Science, agreed that Brew-Maglo will give students a great opportunity and a "competitive edge."

"This system will allow recipe repeatability in brewing from semester to semester . . . a huge step beyond the home-brewing equipment we previously used."

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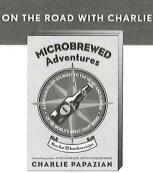
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you start cooling it; normally it is safe to assume  $T_b$  is 212° F or 100° C. It doesn't otherwise matter what units you use for volume or temperature.

For my low-energy batches, I boil 1-2 gallons and cool it by letting it sit with the lid on for an hour or so and, if necessary, setting the brew pot in a larger pot of tap water until it is cool enough to put my hand on. (Keep in mind that heat is lost more rapidly when the pot is still hottest: if you use a combination of air- and water-cooling, use air-cooling first because its effectiveness decreases rapidly as the pot cools.) Then I top off the fermenter with tap water. When the fermenter is nearly up to the 5-gallon total, I pitch the yeast and mix it in with the tap's spray nozzle, which aerates the wort well. Even when I pitch only a small "starter" package of liquid yeast, the fermentation starts rapidly—which is the main purpose of cooling wort.

# BUL IS THE BEER GOOD?

When my first experimental batch of Low Energy Ale was ready to taste, I worked up the courage to offer a sample to my buddy Gordon Hull, a professional brewer who now hand-makes a wonderful sparkling dry mead (to learn more, go to www.heidrun.com). The verdict? Hull said he thought it was one of the best beers I've ever made.

With that thumbs-up, I made three more low-energy batches that all turned out clean and professional-tasting. I've limited myself so far to English ales because I live in an English-like climate and the basement temperature is perfect for aging and serving them. But these were mild ales with subtle flavors, so major flaws would have been easy to detect. Given their success, I would not be afraid to try low-energy brewing for more refined styles like Pilsner.

Should you try low-energy brewing? I recommend trying the same experiment I did: start by making a batch of your everyday beer using as little energy as you can. But don't scrimp on the ingredients or on sanitation, and make sure that you boil long enough to extract hop bitterness and kill any uninvited microorganisms. Especially try minimizing the amount of water you boil because that seems to be the biggest factor controlling ener-

gy consumption. You may well find that you can produce a very drinkable beverage without feeling quite so guilty—or tired—at the end of your brew day.

Steve Railsback is a consulting environmental engineer and adjunct professor in the department of Mathematics at Humboldt State University. He has been homebrewing since 1980 and is a past president of the East Tennessee Brewers Guild.Charles Chamberlin is a professor in the department of Environmental Resource Engineering and co-director of the Schatz Energy Research Center at Humboldt State.



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# PERFORMING A SIMPLE INTERNET SEARCH ON HOP VARIETIES WILL PROVIDE ADEQUATE BACKGROUND INFORMATION TO HELP YOU CHOOSE VARIETIES APPROPRIATE FOR YOUR LOCATION.

# THE ROOT OF IT ALL

With more than 80 varieties of hops available, how will you choose which to plant? Ask yourself three important questions: What varieties do I like to brew with? What varieties will perform best in my location? And where do I get these rhizomes?

First, pick the varieties that you'd like to brew with. Consider your objective for growing hops; to supply your entire year's demand, or to supply a few special brews? I recommend planting as many varieties as possible, both aroma and bittering, to cover all your bases.

Next, research your location. Hops grow between the 35th and 55th parallels; locales outside these latitudes will not provide sufficient day lengths for vegetative growth and flowering. Try to pick varieties that typically grow closest to your latitude. For example, the Zatec region of the Czech Republic is located at 50° N; therefore Saaz grown at 35° N may produce few flowers, if any.

The difference between producing a few cones and a few pounds is climate. Hops are obstinate, but they survive if exposed to extreme conditions such as high winds, hail or intolerable heat. Compare your climate to traditional hop growing regions. As a general rule of thumb, aroma varieties perform poorly in hot and dry climates, unless afternoon shade is provided.

Do a background check on each variety's resistance to disease and pests. In general, newer varieties are fairly tolerant of common hop pests and diseases, while traditional European varieties hardly stand a chance. Most U.S.-bred varieties such as Chinook, Nugget, Willamette and particularly Cascade perform well everywhere. Hop growers living in non-traditional growing areas with a low risk of disease, such as the Rocky Mountain region, have more flexibility in choosing varieties. Performing a simple Internet search on hop varieties (see the sidebar for suggested resources) will provide adequate background information to help you choose varieties appropriate for your location.

With your list of varieties you'd like to grow, it's time to shop for rhizomes. Explore local sources first, including your local homebrew shop. Befriend nearby backyard or commercial hop growers and offer to dig up rhizomes early spring. This way, the plant's history on performance, pest and disease incidences is known. If a local source is not available, search "hop rhizomes" online to find several retailers. Keep in mind that fungal spores and viruses can be carried with rhizomes, so watch for early signs of disease.

# **BUILDING THE PERFECT HOME**

Since hops live 25-50 years, site planning is critical. Keep in mind that they need 6



to 30 feet of climbing space in a sunny location with well-draining soil. To prevent scorching in areas of intense sunlight, choose a location that provides afternoon shade, especially if planting European aroma varieties.

Planting months are flexible depending on climate (e.g. February in California, but April-May in Colorado).

# Trellising

Hops are a climbing bine, different from a vine that has tendrils. Hop bines climb clockwise up a narrow support by the aid of tiny hairs. While mature plants will coil around diameters the size of tree trunks (which were used before modern wire trellising), a narrow string will better coax the young shoots upwards. Commercial hop yards use coconut-husk twine. Any type of string will suffice, especially coarse material such as hemp. Garden lattices, chain-link fences, and netting will also work. Many backyard growers simply run string down

# HOP VARIETY RESOURCES

# HopUnion

www.hopunion.com (direct link: www.hopunion.com/hopunion-variety-databook.pdf)

# Yakima Chief

www.yakimachief.com (direct link: www.yakimachief.com/hopvarieties/hopvar.html)



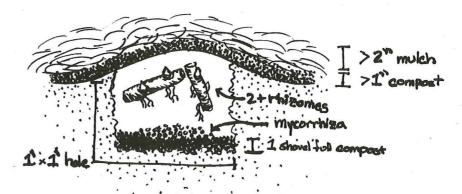


from the roof of their house, create a hedgerow along a fence, or erect a homemade trellis. In the wild, hops are found climbing amongst willows, hence their Latin name Humulus lupulus, meaning "like a wolf between sheep." With that said, be careful to control wandering hop bines ready to smother nearby plants or structures.

#### Soil Preparation

Hops thrive in loamy, well-draining soil with a pH of 5.5-8.0. To plant your rhizomes, dig a hole 1-foot deep and add a shovelful of compost. To boost healthy root growth, sprinkle in mycorrhizal inoculum. Mycorrhizae, available at local nurseries, is a symbiosis of fungi and plant roots that aids in nutrient uptake of the plant, especially water and phosphorus. If you have poor-draining soil, add some potting mix and form a hill. Plant one to six rhizomes 2 inches below the soil surface, either vertically or horizontally so that the shoots (or "eyes") point upward. Planting more than two rhizomes per hill will jumpstart your first-year crop. Be sure to space different varieties 3-5 feet apart to avoid mixing. Topdress the area with more compost, and cover with mulch such as grass clippings, newspaper, straw, etc. Mulch will suppress weeds, protect young plants from a late frost, and add organic matter to your soil.

Top-dress your hops with a shovelful of compost every spring and late fall. Compost degrades slowly and promotes healthy soil ecology, preventing the need for quick-fix liquid fertilizers. It will also slowly raise the pH of acidic soils and lower the pH of basic soils. You can easily make your own compost, using your spent brewing grains and hops, grass clippings, and kitchen scraps. Otherwise, your local nursery



A diagram of how to plant rhizomes.



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www.beertown.org March/April 2009

Research in New Zealand hop yards has shown that a predatory mite Phytoseiulus persimilis is more effective in controlling spider mites than insecticides.

Likewise, the most effective control for aphids is ladybugs



should have several types of compost to choose from.

#### FROM ROOT TO FLOWER

#### Pruning and Training

Mature plants over three years old require root pruning in early spring. Without annual pruning, rhizomes will spread throughout the yard, hoarding nutrients and water from the crown needed by the shoots. The first spring shoots could also be pruned, encouraging more robust secondary shoot growth.

Once these shoots are 1-2 feet tall, pick two to three bines of equal size to train clockwise from the top. Most sources will instruct training no more than four to six bines per plant. However, the older the plant and shorter the height, the more bines a single rootstock can support.

#### Watering

Hops require a lot of water, especially in their first year. Mature plants grow roots 12 feet deep and require less frequent watering. In areas where irrigation is necessary, never apply overhead water such as sprinklers. Wet hop foliage and pooling at the base is an open invitation to fungal diseases. A drip irrigation system is the most waterefficient way to go.

On brew days, irrigate with excess water from your chiller. If you have basic soils with a pH of 7 or higher, use the slightly acidic mash water leftover after lautering. Never use water that is too hot or acidic. Also, never water with your sanitizing or cleaning solution, as this will kill beneficial soil microorganisms.

#### Pests and Disease

The most common hop pests are aphids and two-spotted spider mites. Both multiply rapidly, turning a minor infestation into a nightmare overnight. Research in New Zealand hop yards has shown that a predatory mite Phytoseiulus persimilis is more effective in controlling spider mites than insecticides. Likewise, the most effective control for aphids is ladybugs. Predators can be purchased at a local nursery, or attracted to your yard by colorful flowers. If you do choose to spray, insecticidal soaps are effective and have a low incidence of evolved resistance. Always spray in the morning to prevent sunburn, and remember not to apply chemicals to maturing cones.

The most serious threats to hops, especial-



ly in cool and damp climates, are the fungal diseases powdery mildew, downy mildew, and verticillium wilt. Powdery mildew appears as white patches on leaves. Downy mildew forms "basal spikes," or stunted shoots and laterals with silvery curled leaves black on the undersides. Verticillium wilt appears later in the season, having symptoms of streaked yellow and wilted leaves. It is critical to catch fungal growth early by removing and burning infected tissues. Also, sulfur-based fungicides are effective in halting early fungal growth.

Preventative measures and constant monitoring will prevent devastating outbreaks of pests and diseases. The idea is to create an environment inhospitable by pests and diseases, through encouraging predators and promoting good air circulation. Stripping the lower 3 feet of the bines in June is the most important preventative approach. In the event of an outbreak that cannot be controlled by methods mentioned above, consult your local nursery.

#### **CASHING IN THE GOLD**

You've planned, pruned and prayed all summer long, and finally, the lupulin arrives! But be patient: a common mistake neophyte hop growers make is harvesting prematurely. Depending on your location, harvest occurs mid-August through September, with aroma varieties maturing first. As resins and oils are synthesized, the cone will send water and nutrients from the bracts into the lupulin glands, leaving the cone slightly dull and papery. When the cones are dry to touch and the aroma has a euphoric pungency, it's time to harvest. You have overshot your window if the lupulin turns orange and smells rancid. If possible, leave the bines intact while picking, so the foliage can lend its nutrients back to the roots for the winter.

Freshly harvested hops can either go directly into the kettle or onto a drying screen. Another common (and devastating) mistake is to improperly dry and store your harvest. Keep in mind three important factors: time, heat, and moisture content. To prevent oxidation, drying should never last more than three days. Speed up drying by blowing hot air over hops spread out on a screen. Heat should never exceed 140° F

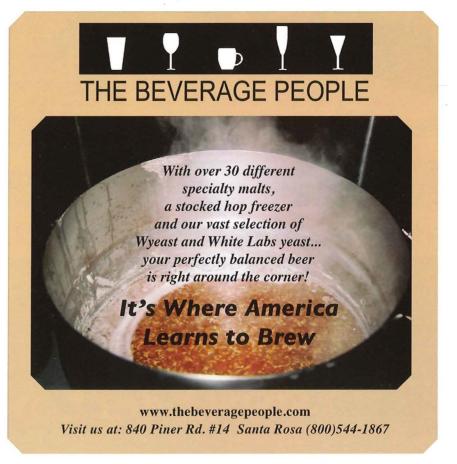
to prevent rancidity. Dried hops need a moisture content 8-10 percent by weight to prevent molding. When the central strig (inner stem of the cone) is almost brittle enough to snap in half, drying is done. Over-drying will shatter the bracts and shake out precious lupulin.

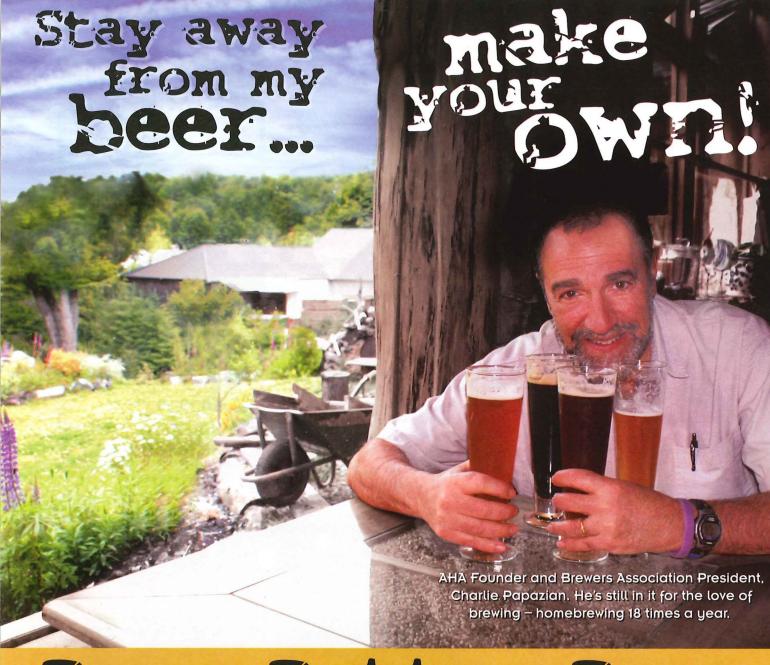
## TUCKING INTO BED FOR THE WINTER

For all your hard work, you can finally sit back and relax with a fresh, wet-hopped homebrew to admire your art. Throughout the fall months, the bines will send nutrients back down to the roots as cache for next year's growth. Your only job now is to cut back the dead bines, cover with compost and mulch, and start planning for next year's yard expansion.

Ali Hamm is a graduate student at Colorado State University studying organic hops. She is also "brewmaster" of CSU for the undergraduate brewing science and technology course. Ali is joining with the Rocky Mountain Hops business group to promote a local hop industry.







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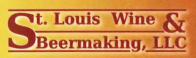
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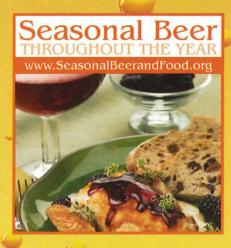
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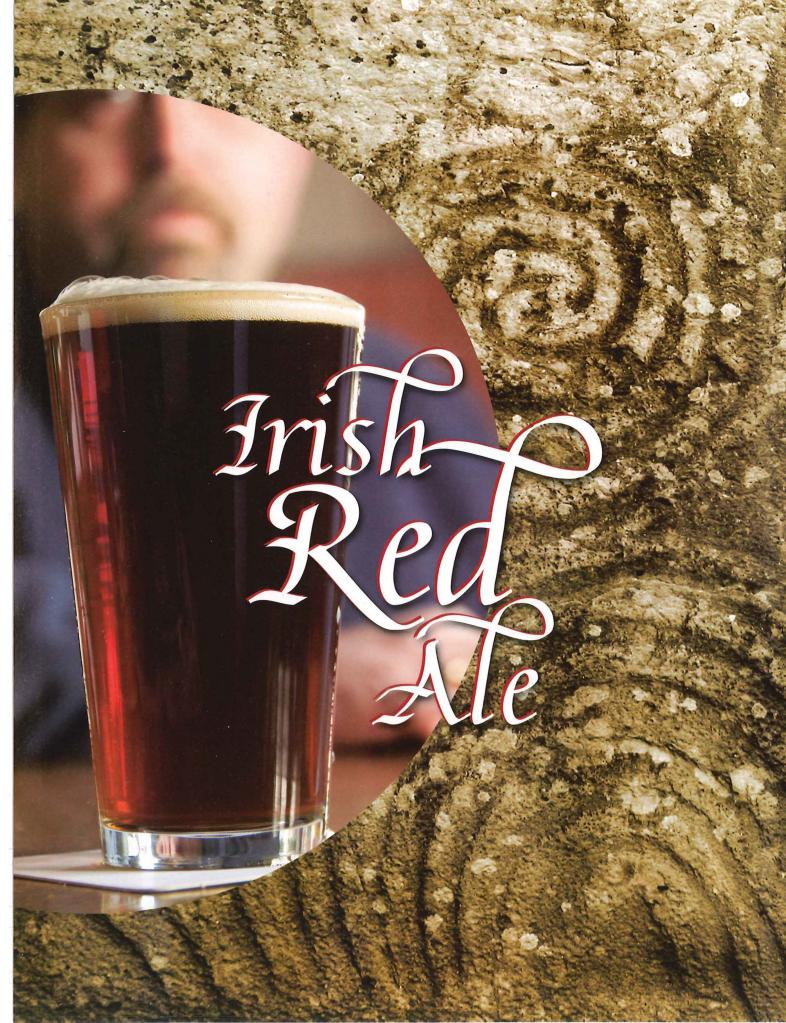


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# Other Beer FROM THE Emerald Isle

T'S OLD YET NEW. IT'S SWEET BUT DRY. IT'S IRISH RED ALE—THE DELIGHTFULLY DRINKABLE PINT THAT'S A GREAT ST. PATRICK'S DAY CHANGE OF PACE FROM THAT OTHER FAMOUS IRISH IMPORT.

IRISH RED HAS BEEN AN INTEGRAL PART OF MY HOME-BREWING REPERTOIRE FOR OVER A DECADE. I'VE FOUND IT TO BE ONE OF THE FEW BEERS ABLE TO BRIDGE THE BROAD SPECTRUM OF APPEAL TO AFICIONADOS, GEEKS, AND EVEN THE LIGHT LAGER CROWD. THE BEST PART IS THAT IRISH RED IS QUICK AND SIMPLE TO MAKE, SO THERE'S NO EXCUSE NOT TO BREW A BATCH.

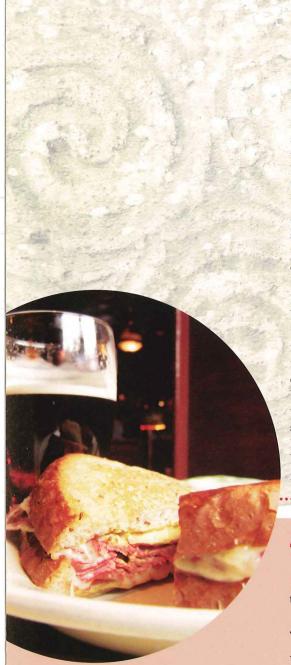
Red Ale has been brewed in Ireland for hundreds of years. However, no one is sure exactly when the style began or whom it was brewed by. Whether it was first made by Celtic tribesmen, the clergy, Vikings, or aliens from Andromeda, the origin of Irish Red Ale has long been lost to antiquity. All that's known for certain is that this ale received its name from the indigenous malting techniques that give it a characteristic reddish hue.

It appears that Red Ale has been permanently designated second banana status in the beer world. When one thinks of Irish beer, stout immediately comes to mind—even though it's a relative newcomer to the scene, not appearing until the late 1600s. But despite its earlier origin, Irish Red was not accorded official BJCP status until 2004. Irish Red is definitely the redheaded stepchild of brewing if there ever was one.

Irish Red Ale is an obscure style. Better-known imports include Smithwick's and Murphy's Red. Sadly, the few times Smithwick's was available to me, I've found it to be disappointing. I suspect my samples were either well past their prime or a victim of altering the recipe to suit the masses. If my wife and I ever get to the Emerald Isle, my first order of business will be to find a fresh pint. Murphy's doesn't count as an Irish Ale; it's a lager.

Domestic microbrewed versions have left me wanting as well. Rogue's St. Rogue Red, although tasty, is bittered with northwest Chinook and Centennial hops; it's not the same thing. Killian's Red, also a lager, didn't pass muster either and remains a curiosity only because of its name. Coors bought the right to use the name from George Killian Lett—an heir of the famous G. H. Lett Brewery—in 1981. Originally, Killian's was an ale and truer to style. But, as I fear with Smithwick's, public demand caused Coors to change the recipe to what it is today. With great excitement, I tried Samuel Adams Irish Red two summers ago. I thought it lacked the characteristic caramel character, and the carbonation was a bit on the fizzy side. However, this beer did win a gold medal at the 2008 World Beer Cup, so perhaps another sampling is in order.

By Mark Pasquinelli



### IF YOU WANT SOMETHING DONE RIGHT...

It appears that the best way to sample an authentic Irish Red Ale is to make it yourself. The first homebrew kit I purchased was an extract Irish Red. For many homebrew suppliers this kit remains one of their best sellers. I immediately fell in love with Irish Red's taste—the delicate pas de deux of sweet caramel malt up front followed by a hint of dry roastiness at the end for a satisfying finish, with just enough hops to hold everything together.

For me, Irish Red is the ultimate session beer; not too dark, alcoholic, sweet or bitter—a metaphor for moderation. Yet despite my satisfaction, for some reason I could not resist tinkering with the kit, adding more crystal, roasted or chocolate malt, even dry hopping in hopes that I could improve upon perfection. I have since switched to all-grain brewing, but the evolution of my Irish Red Ale continued. My present recipe has won numerous awards and remains a favorite for both homebrewers and those

curious in exploring the myriad of flavors that craft brewing has to offer.

As previously stated, Irish Red is a session beer. Most homebrew kits target starting gravities around 1.040 to 1.045. I prefer an original gravity that's a little higher, about 1.050 to 1.055. A touch more alcohol adds to the sensation of body. I've tried even higher starting gravities, but it seems to affect the drinkability. This style is not a candidate for the current Imperial-Everything craze.

My recipe uses Maris Otter malt as a base because of its delicious toasty flavor. This is fortified by a healthy dose of light Munich malt. I then blend CaraRed and 120° crystal malt to provide the sweet caramel notes, with a few ounces of roasted barley for the dry finish. This blend of specialty malts will achieve the proper color, about 16-18 SRM. Anything darker will be too opaque and your ale will lose its beautiful red sparkle. The trick is to balance the crystal malts and roasted barley for the perfect color, caramel

## Better Red Than Dead

#### INGREDIENTS

for 6.0 U.S. gallons (22.7 liters)

Assumes 75% Efficiency

(3.2 kg) Maris Otter malt
(1.4 kg) Munich malt
( 227 g) CaraRed 20
(170 g) Crystal 120
(113 g) Roasted Barley
(43 g) Fuggle
4.6% pellet hops, 45 min
(28 g) East Kent Goldings
4.5 pellet hops, 15 min
White Labs 004 or Wyeas
1084 Irish Ale Yeast
(100 g) priming sugar

Original Gravity: 1.053 Final Gravity: 1.016

IBUs: 26 SRM: 17

#### DIRECTIONS

Use a single-step infusion mash.Add 16 quarts (15.1 liters) of 164° F (73°C) water to the crushed grain to establish a mash temperature of 153°F (67°C). Hold for 60 minutes. Sparge and collect 7.5 gallons (28.4 liters) of wort. Bring to a boil for 90 minutes and add Fuggles and East Kent Goldings hops at 45 and 15 minutes remaining respectively. Ferment at 65° F (18° C) to 68° F (20° C) until completion. Bottle condition or keg at 2.0 volumes of CO<sub>2</sub>.

#### **EXTRACT VERSION:**

Substitute 6.5 lb (3.0 kg) English DME for the base malts. Steep specialty grains for 30 minutes in 160° F (71° C) water. Increase hops 25 percent to compensate for lower utilization rate. Reduce boil to 60 minutes and proceed with remainder of recipe.

BETTER RED THAN DEAD



IRISH ALE BIER KITTY BREWING

**ZYMURGY** March/April 2009 www.beertown.org

flavor and roastiness, which should always be in the background.

I mash at the fairly conservative temperature of 153° F (67° C). It is tempting to mash at higher temperatures, but remember that the crystal malts will provide the necessary sweetness, not the mash temper-

Wyeast 1084 or White Labs 004 Irish Ale Yeast. If only everything were so easy. However, these yeasts come with a caveat: both brands produce diacetyl, a natural byproduct of fermentation that imparts a buttery flavor. A quick glance at the BJCP guidelines will reveal that a hint of diacetyl is a characteristic of Irish Red Ale—yet some

I IMMEDIATELY FELL IN LOVE WITH IRISH RED'S TASTE—
THE DELICATE PAS DE DEUX OF SWEET CARAMEL MALT,
UP FRONT FOLLOWED BY A HINT OF DRY ROASTINESS
AT THE END FOR A SATISFYING FINISH, WITH JUST
ENOUGH HOPS TO HOLD EVERYTHING TOGETHER.

ature. I've tried mashing at higher temperatures—about 155° F (68° C)—and found the result to be cloying, especially if the starting gravity gets too high. Extract brewers have it easy when making an Irish Red Ale. English extracts, like John Bull or Muntons, with the steeped crystal and roasted barley will do the trick.

NO HOPS, NO PROBLEM

For homebrewers whose hop inventories are low because of either scarcity or exorbitant prices, Irish Red Ale is a godsend. It's lightly hopped for several reasons. The use of hops began in central Europe in the Middle Ages and radiated outward, not coming to Ireland until the 17th century. Also, like Scotland, the climate is not conducive to growing hops. Adding insult to injury, the English heavily taxed imported hops, making a highly hopped ale financially disadvantageous to brewers.

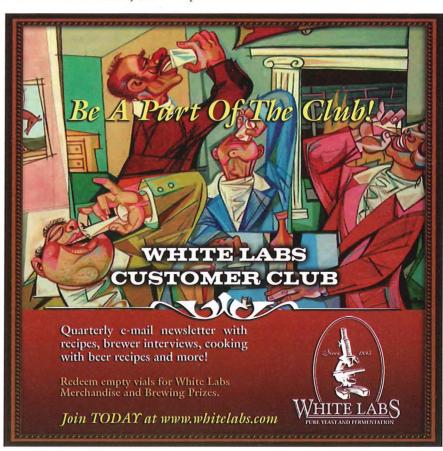
My version targets about 25 IBUs. English hop varieties work best. I use Fuggles at 45 minutes left in the boil rather than 60 minutes to impart more smoothness. I add East Kent Goldings at 15 minutes remaining for flavor. Target, Challenger and Willamette are excellent candidates for substitutions. Avoid using any hops for aroma later in the boil or for dry hopping as they will compete with the caramel aroma.

#### THE DIACETYL DILEMMA

The choice of yeast is straightforward:

judges will deduct points if it's present. It only sounds like a catch-22 because it is.

There are a few ways to combat this "flaw" so your ale won't be mistaken for a bag of Orville Redenbacher's Movie Theater Butter Popcorn. Given time, the yeast will absorb most of the diacetyl, so it's impera-







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tive to have an adequate yeast population. Make a starter.

I don't rack my Irish Red to a secondary fermenter as I do with most beers. This allows a larger volume of yeast to remain exposed to the beer as this strain does tend to floculate more than others. Fermentation temperature is another factor. Keep the temperature low, in the mid- to upper-60s. Lastly, be sure the fermentation has been allowed to go to completion so the yeast has adequate time to reabsorb the diacetyl. I always let mine ferment a few extra days just to be sure.



As with all my homebrews, I weigh my priming sugar rather than measuring it. Using ProMash as my guide, I add about 100 grams of sugar. This will put the carbonation at 2.0 volumes of CO<sub>2</sub>, which is in line for most English-style ales. If you must measure, decrease the sugar from the standard 3/4 cup to 1/2 cup.

Even with a few extra days in the fermenter, my Irish Red goes from grain to glass quickly, about one month. My recipe makes 6 gallons, so there's never a shortage for friends or myself. I'm careful not to serve it too cold. Cellar temperature brings out the nuances of Red Ale's flavor best. Naturally, this session beer should be served in a pint glass. Food guidelines recommend pairing it with a meat dish. I don't know about you, but I'm thinking corned beef with a side of cabbage. Sláinte!

Mark Pasquinelli resides in Elysburg, Pa. with his wife and five cats. He's a member of the PA-Alers Home Brew Club and has been brewing for 10 years, five as an all-grain brewer. He likes to brew Irish Red, Pumpkin Ale and an Imperial Stout with hallucinogenic qualities.

#### REFERENCES

Dornbusch, Horst. "Red Ale: The Other Style from Ireland," *Brew Your Own*, January- February 2003

Sparrow, Jeff. "A Quaffable History of the IRA," Zymurgy, January-February 2004



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## COMMERCIAL CALIBRATION

One way beer judges check their palates is by using commercial "calibration beers"—classic versions of the style they represent. Zymurgy has assembled a panel of four judges who have attained the rank of Grand Master in the Beer Judge Certification Program. Each issue they score two widely available commercial beers (or meads or ciders) using the BJCP scoresheet. We invite you to download your own scoresheets at www.bjcp.org, pick up a bottle of each of the beverages and judge along with them in our Commercial Calibration.



Two organic beers were on tap for our Calibration judges this issue.

First up is Oxford Organic Amber Ale, one of two new organic beers offered from Clipper City Brewing Co. (the other is a raspberry wheat beer) under the name of Oxford Brewing Co. Clipper City recently made the foray into organic brewing with its Oxford lineup.

"We decided to do the organic line because we wanted to dedicate part of our production to supporting the organic farmer," said Clipper City general partner Hugh Sisson. "After all, we are doing the same thing—both of us make small batches of products by hand to the highest levels of quality and purity that we can attain."

Organic Amber is brewed with 100-percent organic malts including pale two-row, Munich, Caramalt and chocolate, as well as 100-percent organic Hallertau hops. It is described as a classic amber ale with biscuit and caramel malt flavors and just enough hops for a crisp finish. Suggested pairings include aged cheeses, roast pork and barbecue. It checks in at 4.75-percent alcohol.

Next up was Wolaver's Oatmeal Stout. Wolaver's is a 10-year veteran of the organic brewing scene based in Middlebury, Vt. In 1998, it began producing Wolaver's Certified Organic Ales in partnership with Panorama Brewing Co. and in 2002, the Wolaver family purchased Otter Creek Brewing, which produces the Otter Creek and Wolaver's brands.



Wolaver's Oatmeal Stout is brewed with locally grown organic rolled oats, as well as organic wheat, two-row, roasted, Munich and caramel barley, and Magnum, Hallertauer and Cascade hops. It is 5.9-percent alcohol by volume and 40 IBUs. Wolaver's suggests pairing Oatmeal Stout with chocolate as well as soft, creamy cheeses. It's also the perfect beer to cook with, adding body to soups, stews and sauces without overpowering them.

Calibration judge David Houseman called it an "excellent oatmeal stout, organic or not" and "very drinkable. This beer lived up to the initial expectations."

Our expert panel includes David Houseman, a Grand Master III judge and competition director for the BJCP from Chester Springs, Pa.; Beth Zangari, a Grand Master level judge from Placerville, Calif. and founding member of Hangtown Association of Zymurgy Enthusiasts (H.A.Z.E.); Scott Bickham, a Grand Master II judge from Corning, N.Y., who has been exam director or associate exam director for the BJCP since 1995; and Gordon Strong, a Grand Master IV judge, principal author of the 2004 BJCP Style Guidelines and president of the BJCP board who lives in Beavercreek, Ohio.

Wolaver's

#### THE JUDGES' SCORES FOR OXFORD ORGANIC AMBER ALE



**Aroma:** Rich, caramel and nutty, chocolate malts are intense. Very low earthy hop aroma. No DMS. No diacetyl. Very low fruity fermentation esters. No specific alcohols. (8/12)

Appearance: Dark amber to light brown; on target for the style. Bright to brilliant clarity. Very nice. Dense, tan head with adequate retention. (3/3)

**Flavor:** Chocolate maltiness with hints of caramel, more as the beer warms. Nutty taste, like an English brown ale. Moderate hop bitterness balances very well, leaving a balanced finish as well. Low hop flavor, not citrus but earthy. No diacetyl. No DMS. No specific alcohols. Low fermentation esters; a very clean ale. (14/20)

Mouthfeel: Smooth, almost creamy with a lingering bitterness. Medium body. No astringency. No apparent alcohol warming, but likely deceptive as the beer goes down very easily. (5/5)

Overall Impression: Excellent drinkability. Chewy and rich. Chocolate aroma/flavor is high and caramel notes a bit low for an American amber ale—almost an American brown ale. Hop aroma and flavor low for style as well. Could adjust malts and hops for better representation of the style, but it's still an excellent beer, especially with beef, like a beef pie in an English pub. The organic nature of this beer didn't detract from this beer at all; a well-made beer may be organic and still be excellent. (7/10)

Total Score: (37/50)



Aroma: Biscuity, grainy malt up front, with moderate earthy, peppery spice hop aroma, notes of fresh baked bread and a hint of green apple. Brown sugar sweetness and nutty, roasted peanut aromas emerge as the sample warms a bit. (9/12)

**Appearance:** Copper with gold highlights, brilliant clarity. Fine foam of off-white bubbles forms low head that dissipates rather quickly to a film and ring around the glass. (3/3)

Flavor: Malt is biscuity at first with subdued caramel flavor and brown sugar sweetness; gives way to grainy flavor mid-palate, then ends with a distinctly roasted peanut, peanut butter nuttiness. Hop flavor is spicy pepper, like green pepper berries without the heat; moderate bitterness. Fermentation is clean. This beer is well balanced between spicy hop and nutty grainy malt, though with a lingering hop bitterness to the finish. (14/20)

**Mouthfeel;** Medium bodied with moderate carbonation. A little creamy; no astringency, but a tangy feel on the sides of the tongue. Subdued, though present alcohol warming lingers in the finish. (5/5)

Overall Impression: Quite an enjoyable beverage, with the brown sugar and toasty flavors I've encountered in the better fresh draught British brown ales. The spicy, peppery rather than citrus hop character is different, as is the peanutty, grainy malt flavor that became more pronounced as the sample warmed a bit. Definitely an alternative to the big citrus hoppiness in some examples, this is well balanced, nudged toward the edge of style. A lovely session beer on its own, would be an equally lovely accompaniment to any meal. (7/10)

Total Score: (38/50)



Aroma Pleasant beery aroma with moderate toasted malt. It has an underlying graininess that may speak to a North American malt base. The hops are on the light side, which is OK for the style, though there are some strawberry and pear esters that add some complexity. (11/15)

Appearance Deep copper color—attractive but on the dark side for the style. The clarity and head retention are both good. (3/3)

**Flavor** Overall character is maltfocused, with a good dose of caramel and toast. I also get some toffee and roasted malts—not quite at the level of a brown ale but more than most ambers I have tasted. The hop bitterness is moderate and balances the malt, but hop flavors are not perceptible. The light fruit esters complement the toasted malt. (15/20)

Mouthfeel The body and mouthfeel are moderate, but not cloying. The carbonation level is good, though there is some astringency that leaves a mouthpuckering sensation. (3/5)

Overall Impression: I enjoyed this beer, though it misses the mark a bit stylistically. It's a nice session beer that exemplifies the style, with more of a malt emphasis. It would perhaps fit better in the Irish Red category, but that could be addressed with a little more finishing hops. By the same token, I like the slight roastiness in the finish, but that also leans more to the red ale style. (6/10)

Total Score: (38/50)



Aroma: Hoppy and biscuity. Hops are somewhat earthy and spicy. Lightly estery. Grainy biscuit malt tends to dominate. Otherwise clean. Malt has a nutty, bready, "English" quality to it, somewhat like an English Brown Ale. (8/12)

**Appearance:** Deep copper color—very pretty. Very clear. Moderate-sized beige head, settled slowly. (3/3)

Flavor: Grainy, biscuity, nutty, bready malt flavor. Little caramel. Moderate bitterness. Balance is about even between hops and malt. Fairly dry finish. Moderate spicy, earthy hop flavor, lingers into the finish. Fairly neutral yeast character. Grain bill seems English, like a nut brown ale. (14/20)

**Mouthfeel:** Medium body, medium carbonation, no alcohol warmth or astringency. (5/5)

Overall Impression: Very drinkable. Mild flavors and superb balance. Less hoppy than a typical American amber, and also has more nutty flavors than caramel. Beautiful color. Bitter enough to be interesting. A good everyday drinking beer. Not a great match for the style. Tastes sort of like a hoppy English brown ale to me. Cleanly fermented, fresh and tasty. Style issues cap the score at 37, but it's a better beer than that score suggests. (7/10)

Total Score: (37/50)



#### THE JUDGES' SCORES FOR WOLAVER'S OATMEAL STOUT



Aroma: Nuttiness from oatmeal stout with sufficient coffee-like roastiness to know this is a stout. Low earthy hop aroma. No DMS. No diacetyl. No distinct alcohol. Light fruity fermentation esters. A very inviting aroma setting high expectations. (10/12)

**Appearance:** Very deep red, nearly opaque, but bright clarity with ruby highlights. Large, thick, dense, tan head with excellent retention. Beautiful beer. (3/3)

Flavor: Roasted malt and barley and nutty, grainy oatmeal flavors dominate. Hop bitterness is medium-high—perhaps a bit high for the style—but still fairly well-balanced with a moderately dry finish and lingering bitterness and caramel notes. Earthy hop flavor is quite low; OK for style. No DMS. Slight diacetyl. No specific alcohol. (17/20)

**Mouthfeel:** Medium-full body. Smooth, creamy mouthfeel with noticeable bitterness but no astringency. No apparent alcohol warming. (5/5)

Overall Impression: Excellent oatmeal stout, organic or not. Bitterness level is a bit high resulting in a drier example of the style. Still delicious, very drinkable and quite representative of an oatmeal stout. I can only wish I had a Reuben or Swiss-on-rye grilled cheese to enjoy with this beer. This beer lived up to the initial expectations. (8/10)

Total Score: (43/50)

www.beertown.org



Aroma: Coffee, mocha malt with sweet creamy protein aromas, like coffee with ice cream, but nuttier and rich, like opening a bin of rolled oats. Very light floral hop aroma. Some faint ripe plum fruity esters emerge as the beer warms. Very clean. (11/12)

**Appearance:** Deep ruby brownblack with garnet highlights (try putting that into SRMs!) with well-formed rocky persistent light tan head. Brilliant clarity. (3/3)

**Flavor:** Chocolate with fresh Italian roast coffee, and fresh rolled oat nuttiness, reminiscent of slightly scorched oatmeal cookies dipped in chocolate milk. Hints of ripe prune esters add complexity; otherwise very clean fermentation. Balance is toward chocolate sweetness with a bit of roast. Lingering moderate hop bitterness combines with roast for a long, dry, memorable finish (18/20).

**Mouthfeel:** Full bodied with firm carbonation produce a silky, creamy texture. Low roast notes provide a clean, dry, lingering finish. A hint of alcohol as the sample warms pleasantly intensifies roast astringency. (5/5)

**Overall Impression:** A brewer friend once referred to bock as a hydraulic sandwich. In that light, this beer is a hydraulic cookie with coffee, cream and chocolate. The substantial roast character provides a clean finish for a rich, silky protein-y oatmeal flavor and texture. I can't decide if this is a breakfast, snack or dessert. Would go equally well with chocolate decadence, plain New York cheesecake, or cherry pie. (8/10)

Total Score: (45/50)



Aroma: Initial aroma is a combination of fruity esters and bittersweet chocolate. The ester level is higher than most examples of the style and adds some solvent notes. The roast barley gives a little coffee aroma and sharpness. The malt character is complex, but a little overwhelmed by the fermentation character. (11/15)

**Appearance:** Good head retention and excellent clarity. It's almost opaque—just a bit of light gets through the meniscus. (3/3)

Flavor: The dominant flavor is roasted barley, which provides a powerful coffee flavor and gives bitterness to the finish. It doesn't have as much creaminess up front as classic examples of this style—the roast barley trumps any oats that were used in the recipe. The fruitiness is more balanced here than in the aroma, and the moderate hop bitterness melds with the roasted malts to give a little more bitterness than is needed in the finish. (16/20)

**Mouthfeel:** Medium body and creaminess are both appropriate for the style, but it has a little too much mouth-puckering astringency from roasted malts in the finish. It has just a touch of alcohol warmth. (3/5)

Overall Impression: This is a very good beer that improved as the coffee and roasted malts toned down. The initial fruitiness was also intense, but was more balanced in the flavors and was at a level that works well with the malt. The roast barley notes yield coffee notes that are welcome in any stout, but they could be reduced a little to soften the acidity and bring out the silkiness of the oats. (7/10)

Total Score: (40/50)



Aroma: Moderate coffee-like roasted grain with some malty sweetness. Clean, with no noticeable esters. No hops. Chocolate, coffee and nutty notes—very enticing. Distinctive oatmeal aroma, as from freshly baked cookies. (11/12)

**Appearance:** Deep brown color, opaque when viewed in room light. When held to a flashlight, the beer is very clear with a deep garnet color. Tall light tan head, settled slowly. (3/3)

Flavor: Moderate malty sweetness initially but finishing with a nutty, coffee dryish finish. Medium bitterness but the malt dominates in the balance. Light chocolate, deep coffee and cream flavors. With the sweetness, it tastes a bit like bittersweet chocolate. Oatmeal flavor noted. Low hop flavor, quite restrained. Cleanly fermented with no esters or diacetyl. Some grainy dryness in finish. (18/20)

**Mouthfeel:** Medium-full body, medium-high carbonation. Smooth, silky and creamy. Not harsh or astringent. No alcohol warmth. (5/5)

**Overall Impression:** A very clean and tasty beer. Significant oatmeal flavor. Well-developed coffee roast flavors without any harshness. Smooth, silky and satisfying. A dryish interpretation of the style (but well within style parameters), but with a great depth of flavor. Very fresh and clean. Nicely drinkable. (9/10)

Total Score: (46/50)

47)



American Homebrewers Association 31st Annual

## NATIONAL HOMEBREW COMPETITION 2009

Entries due March 25 - April 8, 2009 - Entries may be shipped or dropped off.

Entries must be submitted to the proper regional site for your state.

#### NHC 2009 F.H. Steinbart Co.

234 S.E. 12<sup>th</sup> Ave. Portland, OR 97214 NHC 2009\* Beer, Beer, & More Beer

975 Detroit Ave, Ste. D Concord, CA 94518

#### **ALES Competition**

Entries due April 9, 2009 The Bushwakker 2206 Dewdney Ave Regina, SK S4R IH3 See www.alesclub.com for entry details.

#### NHC 2009 Two Brothers Brewing Co.

Attn: Gabe Nanni 30 W 315 Calumet Ave Warrenville, IL 60555

#### **International Entries**

Please send all international beer, mead, and cider entries other than Canadian entries, to:

#### NHC 2009 AleSmith Brewing Co.

9368 Cabot Dr San Diego, CA 92126



126 Muskingum Ave, Ste. E Zanesville, OH 43701

#### NHC 2009 Home Sweet Homebrew

2008 Sansom St Philadelphia, PA 19103



NHC 2009\* AleSmith Brewing Co.

9368 Cabot Dr San Diego, CA 92126

\*California entrants see www.beertown.org for list of zip codes in these regions.

## NHC 2009 / Oskar Blues Brewery

Attn: Forest 1800 Pike Road, Unit B Longmont, CO 80501 Ship-to Location Only

NHC 2009 Northern Brewer -Warehouse

1945 W. Co Rd C2 Roseville, MN 55113 Drop-off Location Only
Northern Brewer - Store

1150 Grand Ave St. Paul, MN 55105 NHC 2009 Brew Depot

10595 Old Alabama Road Connector, Ste. 10 Alpharetta, GA 30022



## Pioneer Brewing in Patagonia

ur plane lands in Bariloche, the largest town in Andean Patagonia. Outside our window is an eye-popping expanse of forested mountain lakes and national parks. It is eight days past the December 21 summer solstice. The spring rains have abated and the summer high season has begun. Through a lucky coincidence, a rendezvous emerges with Jorge Klimenko, head brewer and owner of the Sur Patagónica Brewing Co.

Jorge takes us to his hometown of San Martin de Los Andes, a four-hour drive via a "scenic shortcut" on mostly dirt roads casually meandering through the Seven Lakes area. One hour into our journey, we make an unscheduled stop at the Australis Cerevisiae, a brewery/restaurant near Villa La Angostura. The wood and slate-stone gabled restaurant seems to emerge as would a creature-dweller from the surrounding forest and pastures.

Osvaldo and Betty Tarquini welcome us. We seem to have entered a fairytale. Bright, airy, rustic and comforting ambience enhances our enjoyment of their fantastic food and fantastic beer. Sadly, we are the only ones here. Their German-style Pilsener, Irish-style stout, American-style strong ale and India pale ale are world-class quality beers. We are reminded that a beer culture has not yet been developed in



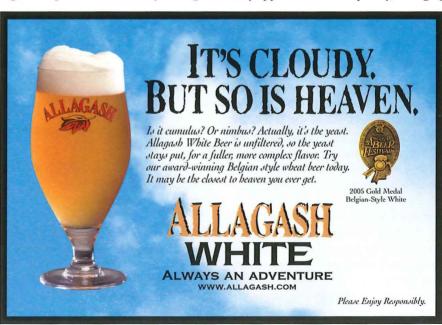
Brewery/restaurant, Australis Cerevisiae



Charlie and Jorge Klimenko

Argentina. Good beer and food are not yet enough to draw customers.

Osvaldo and Betty are contemplating moving their operation to the busy setting of nearby Bariloche, where beer and food enthusiasts would find it easier to discover the obvious value they could offer. Meanwhile, my wife Sandra, Jorge and I fully appreciate their hospitality, indulging



in what turned out to be the best brewery/restaurant we found in all of our Patagonian travels.

The sun is preparing to retire and we push onward to St. Martins. At 10 p.m. we are about two hours away from our destination. In Patagonia, travelers must be fully prepared for unanticipated adventures. Distances are measured by time, not kilometers. Soon we encounter a long line of cars, stopped and going nowhere. We all groan in unison. At the head of the stalled procession, an enormous tour bus has become mired in spring runoff. We had barely been in Argentina for 48 hours. We had visited five breweries and tasted 50 beers. Night is descending. We walk to check out our situation. Mud is squishing through the soles of our shoes.



Sandra and I look at each other, smile and chant under our breath, "Relax, don't worry, have a homebrew." Within minutes, a Land Rover appears and miraculously extracts the bus from the mire. True! Then we watch the circus-like performance of dozens of vehicles accelerating, slipping and slopping their way through the mud, bus included. This is first-class outdoor entertainment, without the beer.

We arrive at our hotel about midnight. Hungry and thirsty, we remind ourselves that we are in Patagonia. We are just in time for dinner. Exhausted, yet in good spirits, we toast our continuing adventure with locally brewed brown ales and leisurely enjoy dinner before retiring at 1:30 a.m.

Here is where it gets more interesting. Imagine a small lakeside town of 3,000 surrounded by forested mountains and snow-capped volcanoes. It is the day before New Year's Eve. The sky is blue. All of Patagonia stretches 1,300 miles farther to the south and the first thing you discover is that

#### Mai Goodness - MyBock **All-Grain Recipe**

#### **Ingredients** for 5.5 U.S. gallons (21 liters)

11.25 lb	(5.1 kg) German Pilsener malt	
12.0 oz	(340 g) Belgian aromatic malt	
12.0 oz	(340 g) honey malt	
4.0 oz	(113 g) German sauer malt	
1.25 oz	(35 g) German Hallertauer hops 4.4% alpha (5.5 HBU/154 MBU) 60 min	
1.5 oz	(42 g) German Hallertauer hops 4.4% alpha (6.6 HBU/184 MBU) 15 min	
0.5 oz	(14 g) Crystal hops 5.5% alpha, I min	
0.4 oz	(12 g) Crystal hop pellets, dry hop	
0.25 tsp	(I g) powdered Irish moss	
	Cry Havoc (White Lab) lager/ale yeast is preferred. Use of Bavarian type lager yeast is a good second choice	
0.75 cup	(175 ml measure) corn sugar (priming bottles) or 0.33 cup (80 ml) corn sugar for kegging	

Target Original Gravity: 1.070 (17.1 B) **Target Extraction Efficiency: 80%** Approximate Final Gravity: 1.022 (5.5 B) IBU's: about 35 Approximate Color: 8 SRM (16 EBC)

Alcohol: 7.0% by volume

#### **Directions**

A step infusion mash is employed to mash the grains. Add 13 quarts (12.4 liters) of 140° F (60° C) water to the crushed grain, stir, stabilize and hold the temperature at 132° F (53° C) for 30 minutes. Add 6.5 quarts (6.2 liters) of boiling water and add heat to bring temperature up to 155° F (68° C) and hold for about 30 minutes. Raise temperature to 167° F (75° C), lauter and sparge with 3.5 gallons (13.5 liters) of 170° F (77° C) water. Collect about 6 gallons (23 liters) of runoff. Add 60-minute hops and bring to a full and vigorous boil.

The total boil time will be 60 minutes. When 15 minutes remain add the 15-minute hops. When 10 minutes remain add the Irish moss. When I minute remains add the I-minute hops. After a total wort boil of 60 minutes turn off the heat and place the pot (with cover on) in a running cold-water bath for 30 minutes. Continue to chill in the immersion or use other methods to chill your wort. Strain and sparge the wort into a sanitized fermenter. Bring the total volume to 5.5 gallons (21 liters) with additional cold water if necessary. Aerate the wort very well.

Pitch the yeast when temperature of wort is about 70° F (21° C). Once visible signs of fermentation are evident, ferment at temperatures of about 55° F (12.5° C) for about one week or when fermentation shows signs of calm and stopping. Rack from your primary to a secondary and add the hop pellets for dry hopping. "Lager" the beer at temperatures between 35- 45° F (1.5-7° C) for four to six weeks. Prime with sugar and bottle or keg when complete.

there are three microbreweries in this tiny mountain town and you have got to go to work on your vacation.

No stranger to niche marketing of quality products, Jorge's endeavors into homebrewing (via an introduction through The Complete Joy of Homebrewing) got the better of him. Brewing in 200- to 300-liter (about 50- to 75-gallon) batches, all his beer is handbottled, capped and labeled—one bottle at a time. His brewery, Cervecería Sur Patagónica (www.surpatagonica.com.ar), is indicative of what we were to discover of many other microbrewers throughout Patagonia.

Since mid-year 2003, his 400-square-foot brewery has been an endeavor into the challenges of finding ingredients, making quality beer, distributing, and developing consumer

## Mai Goodness - MyBock Mash/Extract Recipe

(4.4 kg) very light malt extract

#### Ingredients for 5.5 U.S. gallons (21 liters)

9.75 lb

syrup or 7.8 lb (3.5 kg) very	
light DRIED malt extract	
(340 g) Belgian aromatic malt	
(340 g) honey malt	
(113 g) German sauer malt	
(56 g) German Hallertauer	
hops 4.4% alpha (8.8 HBU/246	
MBU) 60 min	
(42 g) German Hallertauer	
hops 4.4% alpha (6.6 HBU/184	
MBU) 15 min	
(14 g) Crystal hops 5.5%	
alpha, I min	
(12 g) Crystal hop pellets, dry	
hop	
(I g) powdered Irish moss	
Cry Havoc (White Lab)	

**Target Original Gravity:** 1.070 (17.1 B) **Target Extraction Efficiency:** 80% **Approximate Final Gravity:** 1.022 (5.5 B)

lager/ale yeast is preferred.

Use of Bavarian type lager

yeast is a good second choice.

(175 ml measure) corn sugar

(priming bottles) or 0.33 cup

(80 ml) corn sugar for kegging

IBU's: about 35
Approximate Color: 8 SRM (16 EBC)

Alcohol: 7.0% by volume

0.75 cup

#### **Directions**

Heat 1.75 quarts (1.7 liters) water to 172° F (77.5° C) and add crushed grains. Stir well to distribute heat. Temperature should stabilize at about 155° F (68° C). Wrap a towel around the pot and set aside for about 45 minutes. Have a homebrew.

After 45 minutes add heat to the mini-mash and raise the temperature to  $167^{\circ}$  F (75° C). Pass the liquid and grains into a strainer and rinse with  $170^{\circ}$  F (77° C) water. Discard the grains.

Add to the sweet extract you have just produced more water, bringing the volume up to about 3 gallons (11.5 liters). Add malt extract and 60 minute hops and bring to a boil.

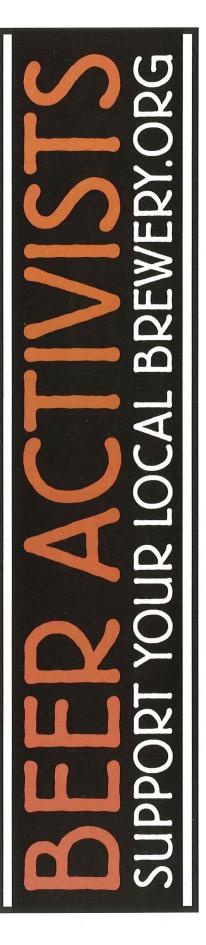
The total boil time will be 60 minutes. When 15 minutes remain add the 15-minute hops. When 10 minutes remain add Irish moss. When 1 minute remains add the 1-minute hops. After total wort boil of 60 minutes turn off the heat. Immerse the covered pot of wort in a cold water bath and let sit for 15-30 minutes or the time it takes to have a couple of homebrews.

Strain out and sparge hops and direct the hot wort into a sanitized fermenter to which 2.0 gallons (7.5 liters) of cold water has been added. If necessary add cold water to achieve a 5.5 gallon (21 liter) batch size. Aerate the wort very well. Pitch the yeast when temperature of wort is about 70° F (21° C). Once visible signs of fermentation are evident ferment at temperatures of about 55° F (12.5° C) for about one week or when fermentation shows signs of calm and stopping. Rack from your primary to a secondary and add the hop pellets for dry hopping. "Lager" the beer at temperatures between 35- 45° F (1.5-7° C) for four to six weeks. Prime with sugar and bottle or keg when complete.

appreciation for beers with flavor and character. Blonde Ale (Rubia), Dark Ale (Negra) and Red Ale (Roja) represent the baseline of most beers offered by all the artisanal brewers throughout Argentina. Many brewers eventually branch out to more complex

beer types. Jorge was emerging from the beginning phases of his beer journey.

I feel encouraged that the beer revolution is well underway in Patagonia, but this also brings about the good, the bad and the ugly.



On a "good beer" tip from our hotel attendant we confidently visit Cerveceria Regional. Claiming to be a brewery/pub, we first sample one of Jorge's Sur Patagónica brews, which are on tap. The beer is not what we had experienced the day before. We argue with the owner that this could not possibly be Sur Patagónica and we ask

for the bottled version. It is excellent, as we had anticipated. We later learn that this "brewery/pub" in fact does not brew its own beer and actually has a reputation of putting other craft beers on tap and calling them their own. We try a few other brews and find some reasonably OK ones, but most beers are poorly cared for, a reflection

of the bad and ugly part of the wild-west adventure we are on.

I am constantly reminded during our journey through Patagonia that this is a time-mirrored reflection of the evolution of our own U.S. beer culture. Those who were diving into the craft beer phenomenon looking for a fast buck ultimately failed. What goes around comes around. Brewers succeed only when inspired by their passion and love of beer and brewing.

It is early 2009. Jorge is impassioned about beer, education and quality. His brewery is still a wonderful beginning point for any journey through Patagonia.

Let's cut the shuck and jive and get on with the recipe. Whether your springtime comes in March or September, German-style Maibock lager is a year-round treat. Here's a recipe I've had a great deal of success with: Mai Goodness – MyBock.

Charlie Papazian is founder of the American Homebrewers Association.



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## **Knickerbocker Battle**of the Brews

The Saratoga Thoroughbrews Homebrew Club held the 13th annual Knickerbocker Battle of the Brews at the C. H. Evans Brewing Company in Albany, N.Y. on November 8. The competition saw 227 entries from 74 brewers. Judges were faced with 13 flights of approximately 17 beers per flight.

Knickerbocker is primarily a New York state homebrew competition, and residents who received awards also got points toward the New York State Homebrewer of the Year. Competition organizer Keith Looney and judge coordinator Greg Mobley offered some insight about the competition organization and logistics.

Zymurgy: How was C. H. Evans as a

venue for the competition?

GM: The Albany Pump Station/C. H. Evans is a great facility. Neil Evans, George DePiro and the staff there have been excellent to us over the years, including hosting BJCP exams and classes. The facility and lunch are provided free to our club for the competition each year.

KL: I spoke to George DePiro about the Brewer's Choice award in one of the first years that we held our competition at C.H. Evans and he was enthusiastic about the idea. Unfortunately, he recently told me that I was the only one to take advantage of the offer when I won BOS with a braggot a few years back. This year I tried to make sure that the brewer had all of the



details necessary to get a recipe and coordinate the brewing with George.

Zymurgy: Seems like in any competition there is a certain percentage of entrants who mis-classify their beers. Were there any problems with entrants falling victim



#### KUDOS-BEST OF SHOW

#### **AHA/BJCP Sanctioned Competition Program**

#### August 2008

Los Angeles County Fair Homebrew Beer Competition, 166 entries—Herb Adams, San Dimas, CA.

#### September 2008

Queensland Amateur Brewing Championship, 247 entries—Mark Nelson, Brisbane, QLD, Australia

Muse Cup (Mead Only Competition), 65 entries—Barry Weeg, Phoenix, AZ.
October 2008

ACT Annual Comp 2008, 130 entries—Craig Webber, ACT.

Lancaster County Brewers showdown, 162 entries—Fred Kline, Coatesville, PA.

Castle Hill Agricultural Society Home Brewing Championship, 141 entries—Cameron Wood, Wollongong, NSW, Australia.

Valhalla: The Meading of Life, 102 entries—Lyle Brown, Fredericksburg, VA.

CBS Spooky Brew Review, 123 entries—Gregg Ferlin, New Lennox, IL.

Brew Bubbas Big Brew Brew-Off: October 2008, 12 entries—Timothy Remus, Chicago, IL.

#### November 2008

Battleground Brewers Skirmish in the Triad, 290 entries—Dan Morgan, Pleasant Garden, NC.

The Dig Pub "Monster" Homebrew
Competition, 32 entries—Keith Bradley, Austin,
TX

2008 THIRSTY Classic, 150 entries—Brian Clauser, St. Peters, MO.

30th Annual California State Homebrew Competition, 199 entries—Daniel Rosbrugh, San Jose, CA.

Knickerbocker Battle of the Brews, 227 entries—Todd Snyder, Williamsville, NY.

Bay Street Bash, 211 entries—Richard Lane,
Charlotte, NC.

Franco-Belgian Challenge Cup, 34 entries—Ed Kilroy, Carmel, IN.

FOSSILS Porter Competition, 9 entries—Phillip Snyder, Nashville, TN.

MALT Turkey Shoot 2008, 125 entries—Brian Gruner, Damascus, MD.

Virginia Sports Hall of Fame Beer Blitz, 121 entries—Lyle Brown, Fredricksburg, VA.

Richmond Wort Hogs Brew Club, 22 entries— Mike Messink, Berkley, MI. Land of the Muddy Waters, 218 entries—Andy Joynt/T.J. Brotherton, Iowa City, IA.

South African National Homebrew Competition, 15 entries—Andre de Beer, Pretoria, South Africa.

Great Brews of America Homebrew
Competition, 130 entries—Michael Simmons,
Tunkannock, PA.

Brew Bubbas Big Brew Brew-Off: November 2008, 11 entries—Todd Abraham, Boone, IA.

#### December 2008

AHA Club-Only Competition, Celebration of the Hop (IPA), 54 entries—Alan Drobshoff, Livermore, CA.

New England Fall Regional Homemade Beer Competition, 91 entries—Tom Goodwin, Storrs Mansfield, CT.

Great Lakes International Cider & Perry Competition, 130 entries—Claude Jolicoeur, QC, Canada.

BEWBC Variant Competition, 10 entries—Sean Russell, Tukwila, WA.

2008 HOTV Holiday Hoopla, 21 entries—Eric Howard, Albany, OR.

GM: You are correct that this happens frequently at competitions, but I don't think the 2008 guidelines had a big impact. Most of the time I see this happen, it is for one of two reasons. Frequently, it is because of errors in labeling entries, as happened to one of our

club members who mixed up his braggot and Old Ale entries. The other is newer brewers who enter their beer based on what they wanted it to be, not on how it came out.

KL: There was one brewer who was still using the 1999 guidelines, but I was able to catch that and correct it. Many times a beer brewed as one style would do better

#### AHA SPECIAL EVENTS

For Information on 2009 AHA Rallies, please see www.AHArally.org

#### March 21

AHA Rally - Stone Brewing World Bistro & Gardens

Escondido, CA. Contact: Kathryn Porter, E-mail: Kathryn@BrewersAssociation.org Web: www.AHArally.org

#### March 25-April 8 Ist Round AHA National Homebrew Competition Entries Due

10 Regional Sites, US & Canada. Contact: Janis Gross,

E-mail: Janis@BrewersAssociation.org Web:www.beertown.org/events/nhc/index.html

#### April 3 AHA Rally -

New Belgium Brewing Co.

Fort Collins, CO. Contact: Kathryn Porter, E-mail: Kathryn@BrewersAssociation.org Web: www.AHArally.org

#### May 2 AHA Big Brew/National Homebrew Day

Worldwide Event. Contact: Janis Gross, E-mail: Janis@BrewersAssociation.org Web: www.beertown.org/events/bigbrew/in dex.html

#### **American Barleywine**

Knickerbocker Best of Show winner Todd Snyder was generous enough to share his winning barleywine recipe. Snyder brewed this beer April 8, 2006 to help top off a 55-gallon oak whiskey barrel of barleywine that his club, the Niagara Association of Homebrewers, filled as a club event.

## Ingredients for 5 U.S. gallons (19 liters)

17.5 lb	(7.9 kg) Thomas Fawcett
	Golden Promise pale ale malt
2.5 lb	(I.I kg) Muntons Maris Otter
	pale ale malt
13 oz	(369 g) Briess 40L crystal male
13 oz	(369 g) light German Munich
	malt
3.3 oz	(94 g) UK flaked barley, oven
	toasted
1.25 oz	(g) Chinook hop pellets
	13.2%AA, FWH
0.8 oz	(23 g) Cascade hop pellets
	6.0%AA, 20 min.
0.8 oz	(23 g) Centennial hop pellets
	9.4%AA, 20 min.
0.8 oz	(23 g) Cascade hop pellets
	6.0%AA, 10 min.
0.8 oz	(23 g) Amarillo hop pellets
	8.4%AA, 10 min.
0.4 oz	(11 g) Centennial hop pellets
	9.4%AA, 10 min.
0.4 oz	(11 g) Centennial hop pellets
	9.4%AA, 2 min.
0.4 oz	(11 g) Cascade hop pellets
0.4	6.0%AA, 2 min.
0.4 oz	(11 g) Amarillo hop pellets
0.4	8.4%AA, 2 min.
0.4 oz	(11 g) Chinook hop pellets
	13.2%AA, 2 min.

#### **Directions**

Conduct a single temperature infusion mash at 155° F (68° C). Collect 6 gallons (23 L) of wort at 1.104 original specific gravity. Boil 90 minutes. After primary fermentation at 68°F (20° C), rack onto dry hops and cellar for two weeks. Rack to tertiary fermenter, age, keg and force carbonate, age, and bottle with a Blichmann Beer Gun.

#### **Extract Version**

Substitute 16 lb (7.25 kg) of Muntons light liquid malt extract for pale ale and Munich malts and flaked barley. Given the large amount of extract this recipe calls for, a full-wort boil is recommended. Steep grains in I gallon (3.8 L) of 160° F (71° C) water for 20 minutes, then rinse with I gallon (3.8 L) of hot water. Top up kettle to 5 gallons (19 L) and stir in extract. Add first wort hops and bring to a boil. Add hops according to the recipe. After a 60 minute boil, chill wort to 68° F (20° C), rack to fermenter, top up to 5 gallons (19 L) if necessary, and pitch a larger starter (or slurry from a previous batch) of yeast. Aerate well. When fermentation subsides, rack to secondary with dry hops and cellar for two weeks. Rack to tertiary fermenter to age. Keg or bottle after sufficiently aging the beer (several weeks to several months).

if entered as a different style. For example, certain over-hopped English styles might do better if entered as their American counterparts. What I find most often as registrar is people indicating special ingredients with beers classified as traditional styles or leaving out required supplementary information for the fruit/specialty/etc. styles.

Zymurgy: Any specific challenges with allowing entrants to use PET bottles? (e.g. light damage, punctures, etc.) Seems like a lot of extra work having to mail back those carbonator caps...

GM: None this year, mostly due to those entries being carried to the competition, as opposed to shipped weeks ahead of time. I think only one PET bottle was shipped this year. The carbonators are all numbered, so they can be matched up with entries and returned. Since most were carried in, the entrant is present and can be given them back with his score sheets at the end of the day.

KL: When necessary, we just drop the car-

0.8 oz

0.8 oz

(23 g) Chinook hop pellets, 2

(23 g) Centennial hop pellets,

Wyeast No. 1968 London ESB

weeks in secondary

2 weeks in secondary

ale yeast



#### AHA/BJCP SANCTIONED COMPETITION PROGRAM CALENDAR

Want to discuss judging, beer styles, competitions and exams? Join the BJCP Members Forum at www.bjcp.org/phpBB2/index.php.

To register a new competition, please go to www.bjcp.org/apps/ comp\_reg/comp\_reg.html. Check the AHA or BJCP Web sites to see the latest calendar of events. Competition organizers: please remember to submit your results promptly using our electronic system. Competitions not filing organizer reports will not be allowed to register in the future. Interested in becoming a beer judge? See www.beertown.org/homebrewing/scp/judge.html for information.



#### March 2 EHG's "Dark(er)" Color Beers Competition

Edmonton, AB, Canada. Contact: Kurt Stenberg, Phone: 780-989-2546, E-mail: kurtstenberg911@hotmail.com Web: www.ehg.ca

#### **Amber Waves of Grain**

Buffalo, NY. Contact: Jake Ocque. Phone: 401-374-8907, E-mail: ocque25@yahoo.com Web: www.awoghomebrew.com

#### March 7

#### Cincinnati Bockfest

Cincinnati, OH. Contact: Ray Snyder. Phone: 513-515-0799, E-mail: raysnyder@fuse.net Web: www.bloatarian.org

#### March 7

#### Slurp & Burp Open

Estacada, OR. Contact: Steve Mueller. Phone: 360-687-2520, E-mail: columbushops@gmail.com Web: www.strangebrew.org

#### March 7

#### MCAB XI

St. Paul, MN. Contact: Curt Stock. Phone: 651-644-6098, E-mail: curtisstock@comcast.net Web: www.masterhomebrewer.org

#### March II

#### Kona Brewers Festival Homebrew Competition

Kailua-Kona, Hl. Contact: Fred Housel. Phone: 808-331-8602, E-mail: Fred@kieleokona.com, Web: konabrewcontest.googlepages.com

#### March 14

#### **UKG Drunk Monk Challenge 2009**

Aurora, IL. Contact: John Kleczewski. Phone: 630-621-3342, E-mail: jkleczewski@mindspring.com Web: www.knaves.org/DMC

#### March 14 Shamrock Open

Raleigh, NC. Contact: Brad Vincent. Phone: 413-841-2687, E-mail: shamrock.organizer@gmail.com

#### 9th Annual March Mashness

St. Cloud, MN. Contact: Bruce LeBlanc. Phone: 320-251-0229, E-mail: brewskil@charter.net Web: www.cloudytownbrewers.org/competition

#### **UNYHA XXXI/Empire State Open 20th**

Rochester, NY. Contact: Tina Weymann. Phone: 585-482-3346, E-mail: tweymann@hselaw.com Web: www.unyha.com

#### March 28

#### The Highland Cup

Asheville, NC. Contact: Steve Schwartz. Phone: 828-299-3370, E-mail: steve@highlandbrewing.com

#### March 28

#### **BOSS Chicago Cup Challenge**

Blue Island, IL. Contact: Michael Pelter. Phone: 219-864-4666, E-mail: BOSSBeerComp@gmail.com Web: www.bossbeer.org

#### AHA Club-Only Competition: Beers with O.G. > 1.080

Moorehead, MN. Contact: Susan Ruud. Phone: 218-291-0678, E-mail: susan.ruud@ndsu.edu Web: www.beertown.org/homebrewing/club.html

#### Cascade Brewers Cup

Woodinville, WA. Contact: Jim Lanning. Phone: 425-350-1036, E-mail: jlanning\_hg@msn.com, Web: cascadebrewersclub.org

#### April 4

#### World Cup of Beer

Berkeley, CA. Contact: Lee Shephard. Phone: 510-508-9193, E-mail: shephardlee@gmail.com Web: www.bayareamashers.org

#### April 18

#### 21st Annual Bluff City Brewers & Connoisseurs Homebrew Extravaganza

Memphis, TN. Contact: Douglas Mengwasser. Phone: 901-414-2215, E-mail: djmengwasser@gmail.com, Web: memphisbrews.com

#### April 19

#### The Oregon Garden's Homebrewers Classic

Silverton, OR. Contact: Alan Priest. Phone: 503-375-9980, E-mail: thepriests@comcast.net

#### April 25

#### Mead Free or Die

Manchester, NH. Contact: Michael Fairbrother. Phone: 603-234-9582 E-mail: fairbrother@nhbrewers.com Web: www.nhbrewers.com/meadfreeordie

bonator cap into the prepared envelope with their score sheets immediately after the competition.

Zymurgy: How long have you been involved with the competition and how has it evolved over the years?

GM: I have been involved as a club member since 2003, and was a steward for the 2004 competition. I began judging in 2005. This was my first year as judge coordinator. I think the competition has improved over the years, mainly due to the hard work and dedication of club members like Jim Azotea, the current president and prize wrangler; Keith Looney, the registrar and competition

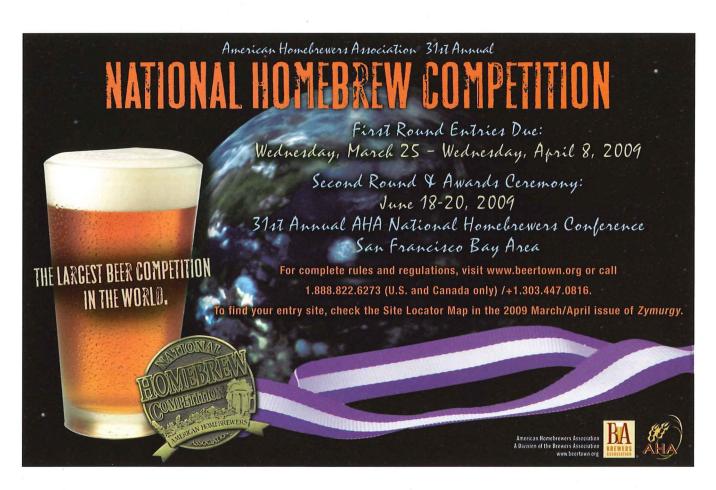
organizer; and Chris Gersey and John Fura, who shared the head steward role and kept things rolling along smoothly. Also, we had a lot more sponsors this year, which makes for a great raffle. We are also seeing a lot more support from the local breweries and brewpubs.

KL: I have been with the competition since our first in 1996. I have been registrar every year and I was also organizer in 1997, 1998 and this year. We have a pretty good system that we patterned after a very efficient system in place at a competition that the initial group of us attended in Syracuse in about 1995. Aside from minor details, our competition procedures haven't changed very much. We

have labeled envelopes so that we can file and return score sheets as soon as the competition ends. I print custom flight summary sheets and labels for the entry cover sheets to make the judges'/stewards' work easier. This year I bought logo tasting glasses for the staff to use and that turned out to be very popular despite the required rinsing between entries. It really went smoother than I expected and they doubled as judge/steward favors.

Zymurgy: Any unusual entries this year, or entries from unusual locales?

GM: This was our best competition in a decade, despite a hops shortage and increasing costs of other brewing sup-





plies. I think it is great that homebrewers are still able to find the time and money (and ingredients) to make some great beers, and offer them up in a competition like ours. I also think it is great that the judges and stewards are willing to devote a day or two to making this a successful event.

KL: This year we had entries from Colorado and Indiana, but the vast majority was from New York with the rest from the surrounding Northeast states. In some years past, we have had entries from as far away as Florida, California, and even Hawaii! We are discussing the possibility of additional drop-off locations in Connecticut and Vermont next year to increase entries. Entries this year were mostly the typical fare, although with a large jump in the number of American IPAs. One brewer, however, entered a gruit and an Oktoberfest that used wormwood for bittering instead of hops.

Amahl Turczyn Scheppach is a former craft brewer and associate editor for *Zymurgy*, and now brews at home in Lafayette, Colo.

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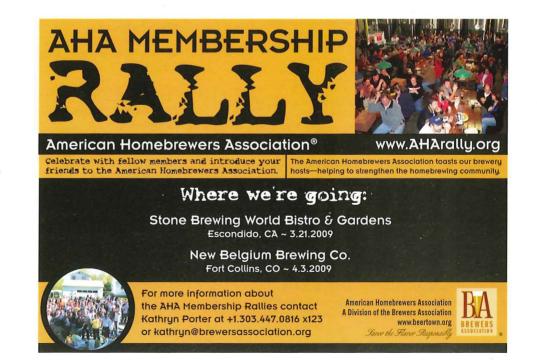
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## **Stalking the Wild Meads**

eing half Sicilian/half Irish-German, I ferment almost anything. Beer brewing, usually ESBs, IPAs and porters, starts at the end of winemaking season, usually late September/early October, depending on when I run out of my stash. Each fall I get a sack of malted barley, a pound of hops, some yeast and specialty grains (plus the ones I roast myself) that usually makes about 35 gallons to see me through the year. Brewing season ends around May, when it gets too warm to make beer in Maryland.

Wine/mead-making starts in mid-summer with cherries, wine berries, elderberries or whatever other fermentables I can find by foraging. No sense in paying for fruit when it's there for the picking. I make grape wine from my vineyard, or buy grapes if the deer do me in. The season usually ends with pears, which I make into cider in early fall. Then I can concentrate on my diminishing beer supply.

My fermenting career got started by foraging, and somehow I got drawn back to my roots. I had been eyeing some fine-looking staghorn sumac nearby and plucked a bucketful. They stayed in my shed for a month because I didn't quite get around to working with them. For the past few years I had passed a large prickly pear cactus outside of a local antique store, and kept telling myself that I had to get some. (I haven't made prickly pear mead in a long time; I won't talk about the last attempt.)

Before I drove to BURP's annual Real Ale Fest in Washington D.C. in mid-November, I stopped by the antique store and asked if I could have some of the prickly pears. The owner said "Wait a minute," and came back with a pair of large tongs. "Take them all." So I did. The



The author foraging for fermentables.

tongs sure were better than my grape snippers.

I got about 3 pounds and not too many thorns. I know that this Papazian guy is big on prickly pear mead, so I checked out his recipe. It didn't call for sumac, but why not? The Native Americans made lemonade with sumac, so I might as well combine them. I figured I was on the cutting edge of wild mead.

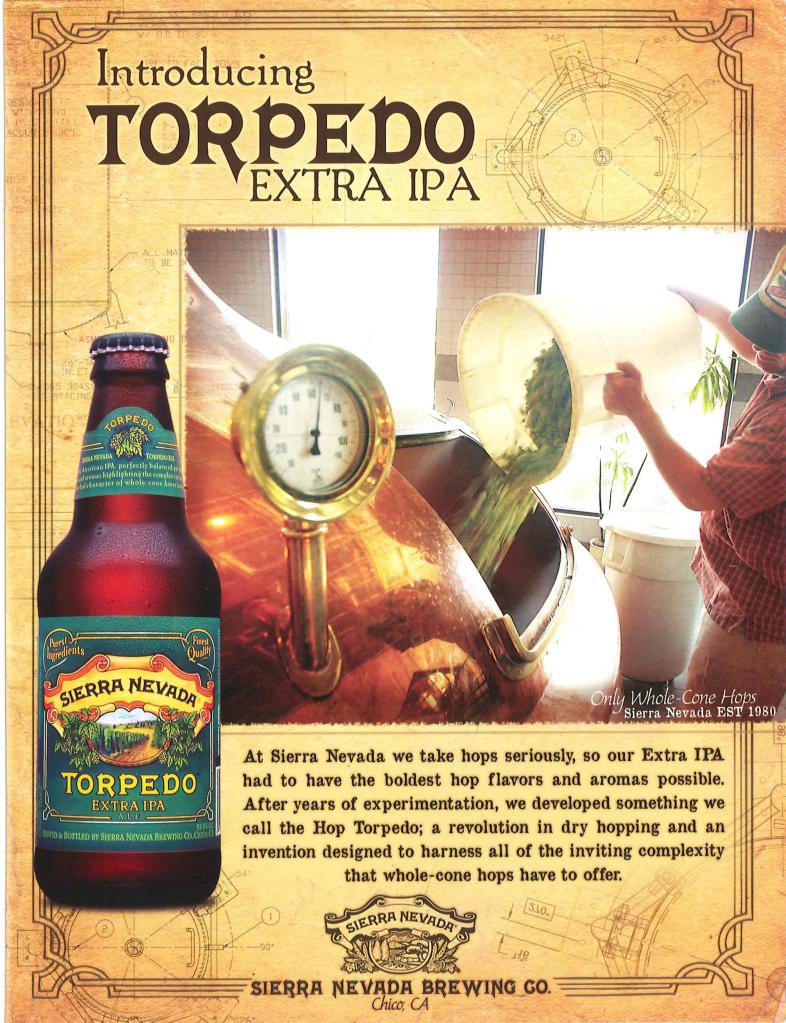
The staghorn sumac has tiny red berries on cone-shaped stalks. I cut them off and crushed them with my trusty potato masher. I then dumped them in hot water and simmered for a while, kind of like a tea. I fished them out with the potato masher as best I could.

Meanwhile I cut up the prickly pears, added them to the sumac juice and cooked them for two hours. I ended up with about a half gallon of liquid. I then boiled 3 pounds of honey in a gallon of water and added them all together. It



looked quite red, so I used Pasteur Red wine yeast. It's fermenting now, so I have about 1.5 gallons of something interesting. I'll let you know how it turns out when I bottle it next spring.

Ralph Bucca is the owner of Chesbayvu Vineyard in southern Maryland, a long-time zymurgist, and a lifetime member of the AHA. He is one of the founding fathers of BURP and a staff writer for the *Mid-Atlantic Brewing News*. He occasionally works as an international volunteer for the Farmer-to-Farmer program, teaching winemaking and food processing in countries you've probably never heard of.





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